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THE PRESIDENT OF THE INTERNATIONAL PHARMACEUTICAL FEDERATION.

Dr. J. J. Hofman, the newly elected president of the International Pharmaceutical Federation, has served for several years as general secretary of this federation. He was a member of the committee nominated at the Congress of Brussels, in 1910, where he assisted in the name of the Netherlands Pharmaceutical Association to propose the foundation of this association of national pharmaceutical societies.

Dr. Hofman was born June 1, 1866, at Alphen, a small city on the Rhine near Leyden, where his father, C. A. Hofman, was director of a public school. In 1867, his father became director of a public school at The Hague and it was in this beautiful city of Holland that the son received his education. Upon finishing his education at the higher school in The Hague he was admitted to the University of Leyden where he studied physics under Lorentz, chemistry under van Bemmelen and Franchimont, and botany under Suringar. He passed the examinations required for the Practice of Pharmacy, in 1887, thus becoming a pharmacist at the age of 21. After serving for somewhat over a year in a pharmacy at Utrecht he was nominated, in 1889, as pharmacist to the Hospital of Rotterdam, where he remained until 1893. During this time he was also chemist for Justice and published several notes. In 1893, he established a pharmacy at The Hague where he is still occupied in the practice of his profession. In connection with his pharmacy Dr. Hofman also conducts a laboratory for chemical and microscopical analysis, besides doing considerable manufacturing.

Dr. Hofman has at several times been elected a member of the Council of the Netherlands Pharmaceutical Society, serving as its president until January 1930. He is also a member of the Hygienic Committee of The Hague and held distinctive positions as a member of committees instituted by the Dutch government for the reorganization of military pharmacy.[1]

[1] Dr. Hofman reported on military pharmacy in Europe, which report was submitted at the Baltimore meeting, A. PH. A.; another communication on the subject is printed in the JOURNAL for June and for September 1930, pages 655 and 1026.

In 1919, the subject of this sketch was awarded the doctors degree at the University of Leyden, the title of his thesis being "Bijdrage tot de kennis der Indische grasolien." At the International Pharmaceutical Congress held at the Hague-Scheveningen, in 1913, he was elected general secretary of the Federation in which position he served until his election as president of the Stockholm meeting in 1930.

Dr. Hofman is an honorary member of the Pharmaceutical Society of Great Britain, Der Deutsche Apotheker Verein, Deutsche Pharmazeutische Gesellschaft and other pharmaceutical societies.—E. H. WIRTH.

Dr. Hofman was elected an honorary member of the AMERICAN PHARMACEUTICAL ASSOCIATION, at the Miami meeting.—*Editor*.

THE HONORARY PRESIDENT OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 1931–1932.

The active interest of Mr. Henry S. Wellcome in the AMERICAN PHARMACEUTICAL ASSOCIATION has been continuous—in 1877, he presented a paper on "Bromine Production in the United States;" in 1879, he wrote on "A Visit to Cinchona Forests"—in 1930, at the Baltimore meeting, he spoke of the possibilities of the "American Institute of Pharmacy.[1]" He has given his support to the latter by words and deeds.

HENRY S. WELLCOME, LONDON.
Honorary President, A. PH. A.

A sketch of Mr. Wellcome will be found in the JOURNAL for July 1925, page 573, and it is hoped that in a later issue of the JOURNAL more will be said of the Honorary President. The sketch referred to contains very brief references to a few of Mr. Wellcome's many activities. General Sir Reginald Wingate said relative to the Tropical Research Laboratories:

"We must readily acknowledge the immense benefits conferred on the country by the institution of the Wellcome Tropical Research Laboratories."

Prof. G. A. Reisner, of Harvard University, writing on the Ethiopian and archæological searches and discoveries said:

"The excavations carried on by H. S. Wellcome have thrown unexpected light on early Ethiopian history."

The Wellcome Historical Museum has been referred to in THIS JOURNAL on a number of occasions; recently an exhibit was made there of the writings of Galen and historical material of that period; the wonderful collection makes exhibits of that kind possible and carries into effect the purpose of Mr. Wellcome. The ASSOCIATION is to be congratulated on his election as Honorary President.

[1] JOUR. A. PH. A. for July 1930, pages 676–679.

EDITORIAL

E. G. EBERLE, EDITOR 10 West Chase Street, BALTIMORE, MD.

SOME OF THE OUTSTANDING VIEWPOINTS OF THE A. PH. A. MEETING.

THIS writer questioned a number of those in attendance at the Miami meeting relative to the activated thoughts that found expression in discussions, resolutions and addresses. In every instance the growing desire was to have pharmacy render a full measure of service as a public health activity; that means should be made effective for a thorough understanding of prescription practice, that everything possible should be done to have the standards serve their purpose and become thoroughly understood by physicians and pharmacists. These thoughts found expression in Resolutions Nos. 4–12 and again in Resolutions 14–20, 25–29; relatively important are those having reference to pharmacy in government and hospital service, Resolutions 21 and 32. A careful perusal of all of the resolutions will bring out the thoughts which formulated them.

A fine coöperative spirit was shown by the divisions of the government services in having representatives at the meeting to confer on important subjects; thus, the resolution on pharmacy corps resulted from a reasonable accord, and the report of the Committee on Pharmacy Corps closed with words that evidenced a belief in one another, and reason that cannot be put aside. "The committee feels that this ASSOCIATION and the Surgeon General should be in accord upon the legislative program if possible . . . Whether the Reece-Copeland bill or the Wainwright bill is endorsed, common sense would seem to demand an agreement of all parties to be effected, if possible, before the real offensive is made to secure passage of the measure."

Relative to the surveys and the progress in N. F. revision, reference is made to the Association Business of this issue, the resolutions and discussions. Dr. J. J. Durrett stated that the Pharmacopœia and National Formulary will assume greater importance in the future. He explained that the department applied the standards, but did not prepare them. It was pointed out that it is more imperative than ever that the legal standards be correct, free from ambiguity and that they be kept abreast of scientific developments. In view of these facts provisions were made for issuing supplements of the National Formulary, should such action become necessary in the interim of revisions.

ETHICAL RESPONSIBILITIES OF THE PHARMACIST.

In the foregoing the professional services rendered by the pharmacists are readily recognized, but their services have further application and in articles they do not manufacture. The Commission on Proprietary Medicines in its Miami report states that "owing to the peculiar nature of his occupation the pharmacist occupies a position of special trust and responsibility toward the community which he serves." Your careful reading of this report in "Association Business," is invited. The closing paragraph is embodied in this comment:

"It is the opinion of this Commission that the professional obligations of the pharmacist require that he should absolutely refuse to be connected with the

distribution of fraudulent or worthless package remedies, or to lend his name or reputation in aid of the distribution of remedies which are advertised in extravagant or misleading terms, or which are otherwise exploited in a manner inconsistent with the better traditions of pharmacy."

The succeeding issues of the JOURNAL will carry the message of pharmacy as embodied in the transactions of the Miami meeting.

THE SALE AND DISPENSING OF MEDICINES.

IN THE decision handed down in the Pennsylvania Ownership Law the judge said:

"It, therefore, will be seen that without violating laws, *the validity of which is conceded,*[1] the owner of a drug store, whether a registered pharmacist or not, cannot purchase or dispense impure or inferior medicines; he cannot, unless he be a licensed physician, prescribe for the sick; he cannot, unless he be a registered pharmacist, have charge of a drug store or compound a prescription. Thus, it would seem every point at which the public health is likely to be injuriously affected by the act of the owner in buying, compounding or selling drugs and medicines is amply safeguarded."

On July 16th the New York Ownership Law was upheld in a decision of the Supreme Court: Justice Edmund H. Lewis, pointed out that the skill of the physician may be largely offset by inferiority in drug and prescription service and that "public health means sound health and it may reasonably require carefully regulated pharmacies to preserve it."

Secretary J. W. Dargavel, of the Minnesota State Board of Pharmacy, reports on a decision rendered July 17th by the Minnesota Supreme Court, relative to the status of milk of magnesia, under the state law.

The case was filed against F. W. Woolworth Co. and others, and the appeal was that of the defendant mentioned. A purpose of bringing an action was to determine whether the position of the Board of Pharmacy was correct and also to bring out more clearly how far the Board could go in the restriction of the sales of drugs, medicines and poisons. Milk of magnesia being a more-or-less harmless medicine, but a U. S. P. product, it was thought by the Board that a favorable decision would place it in a position to know what sales of medicines could be restricted to pharmacy, and the case was brought up in the municipality of Minneapolis before Judge Clyde R. White. The Board was granted a favorable decision in the lower court and the defendants appealed. A syllabus of the decision is laid down in the following:

"1. Milk of magnesia, manufactured, distributed and sold in the manner shown by the evidence stated in the opinion, was not a proprietary medicine.

"2. The pharmacy law, 5814, G. S. 1923, applies to sales of medicines, prepared, sold and used solely, or principally for medicinal purposes, which are not patent or proprietary medicines. The facts that such a medicine, properly prepared, is harmless, and that it is sold in the original package of the manufacturer, do not except its sale from the restriction placed thereon by that section.

"3. The pharmacy law is held constitutional as against the objections that, as applied to the sale of a medicine, sold in the original package of the manufacturer, which medicine, when

[1] Italics ours.

properly prepared, is harmless and in general use as a household remedy, the law is arbitrary, unwarranted, and without any benefit to public health or welfare, and is an unlawful and unreasonable discrimination and restraint on the sale of an article of merchandise."

Defendant thought that milk of magnesia was a proprietary medicine or should be so considered.

A number of references were cited and the conclusion of the court was that the milk of magnesia in question was not a proprietary medicine.

Another question which required consideration was whether a harmless household remedy with a proprietary medicine be held excepted from the pharmacy law.

A number of decisions are cited, including the Donaldson case, and the Court, after reviewing the decisions, states "we find no good reason for departing from the Donaldson case and hold that a harmless household remedy not a patent or proprietary medicine sold and used solely or principally as a medicine comes within the pharmacy law restricting the sale of drugs, medicines and poisons."

The constitutionality of the Minnesota Pharmacy Law was brought into the question and here also the court decides in line with other decisions and states that the interpretation of the court of the Donaldson and Zotalis cases that they hold where a preparation is a medicine prepared, sold and used solely or principally as medicine and is not a patent or proprietary medicine, then its sale comes within the law and is restricted to sales by or under the supervision of a licensed pharmacist; the fact that it is a harmless household medicine does not except it from the law and that as so appealed these cases held the law valid. The judgment of the lower court was affirmed.

Secretary Dargavel comments, "That the state of Minnesota is now in a position to clearly interpret the pharmacy law." Its constitutionality has been upheld and he points with a degree of satisfaction to the fact that Minnesota was the first state to obtain the aspirin ruling and now has clarified the meaning of its laws by carrying a case to the Supreme Court that involved the question of a so-called harmless medicine. The Board is now in position to restrict the sale of drugs used for medicinal purposes, to registered pharmacists. Another case of violation which Boards have more or less difficulty in prosecuting is represented by Kentucky decisions and these also indicate that courts recognize the service of pharmacy as essential in public health service.

THE RIGHT OF INJUNCTION.

We are indebted to secretaries J. W. Gayle and George Wilhelmi for a copy of the decision rendered in an appeal of a case that had been adversely decided in the lower court. Secretary Gayle is quoted in the following:

"For the last two years, the Kentucky Board, realizing the inadequacy of the penalties provided in the pharmacy law for the violation of that section of the law requiring all drug stores to be constantly in charge of a registered pharmacist, the method of asking the courts for an injunction restraining those persons who were found violating this section of the law was adopted. The result has been that perhaps more than a dozen injunction suits have been filed by the Board, each resulting in a decision in favor of the Board's contention and granting the

injunction. Only one case, and that is the appeal referred to, was decided adversely to the Board. The Board took an appeal resulting in a complete victory.

Notes on the Appeal follow:

1. Evidence—Proof of existence at particular time of fact of continuous nature gives rise to inference within logical limits that it exists at subsequent time.

2. Evidence—Where druggist was violating statute on certain date, presumption was same condition existed ten days later (Ky. Stats., secs. 2619–2635*a*).

3. Nuisance—Where evidence showed druggist was filling prescriptions without certificate on certain date, burden shifted to him to show there had been change in conditions before filing of petition for injunction ten days later (Ky. Stats., secs. 2619–2635*a*).

Nuisance—Druggists abandonment of conduct in violation of statute between time of filing petition for injunction and rendition of judgment did not render question moot (Ky. Stats., secs., 2618–2635*a*).

Secretary Gayle comments that a careful reading of the opinion will show that the court grants the petition of the Board particularly upon two points—First, in defense of the allegation made by the defendant that an injunction could not be maintained under Kentucky law against the commission of a crime. The court held that the violation of the pharmacy law, as set out in the Board's petition, was more than an ordinary crime and consequently the Board had the right to enjoin.

The second point was in support of the pleadings of the Board in effect, that the penalties set out in the pharmacy law were wholly inadequate to secure its enforcement and for this reason the Board, having no other remedy under the law, was entitled to an injunction adequately supported by the facts.

Aside from the importance of these decisions comment is made because they stress the professional and public health service of the pharmacist. In recent years the courts have emphasized the importance of this and, indirectly, that the regulations applying to drug stores are founded on their pharmaceutical practice.

SURVEYS.

REFERENCE has been made to various surveys, and comments thereon have heretofore appeared in these columns. The purpose of determining merchandising and other business factors is to improve methods and conduct, and make profits a more definite result. Good work along these lines has been done for a number of years by the Druggists' Research Bureau, under the direction of Dr. E. L. Newcomb; more recently, the Bureau of Commerce has undertaken to conduct a survey in St. Louis, and is now well under way. Surveys which are directed for studying the prescription service have been instituted and promoted; a purpose is to aid in revision work on the U. S. Pharmacopœia and the National Formulary, incidentally, to learn the extent of the prescribing of narcotics; a major object is to reach decisions on the introduction and retention of certain materia medica in the standards; another purpose is to learn, if possible, how prescription service can be made more profitable; the extent of prescription practice and how it can be improved.

Reports bearing on these phases were made at the Miami meeting and will be published in later issues of the JOURNAL, hence, no extended comment is made

at this time. Following the Pharmacopœial Convention of 1910 a survey of prescriptions was made under the direction of C. S. N. Hallberg and Clyde M. Snow; the main effort of this census was to study the extent of use of drugs, chemicals, and galenical for a guide to admissions and deletions of the Standards under revision. A number of studies have been made since the last Pharmacopœial Convention; at the Baltimore meeting Prof. Leon Monell reported on the prescription business in Buffalo, and this year in coöperation with Prof. Clarence N. Brown a report on the prices of prescriptions in Buffalo and Columbus was submitted. The report of Chairman E. N. Gathercoal on "Extent of Use of N. F. Galenicals" will be found in the February JOURNAL of this year; the valuable work is being systematized and continued. A very complete study has been made under the direction of Dr. Robert L. Swain of the prescriptions compounded in Maryland; the results are striking in the fact that with very few exceptions all druggists aided by rendering reports; another study is being made of the components of prescriptions. It is indicated that the results obtained in Maryland will be serviceable in arriving at figures for the entire country, *i. e.*, as a unit for deductions with surveys made in different sections of the country.

These surveys of pharmaceutical activities indicate an awakening and growing interest in pharmacy.

POST—CONVENTION TRIP TO HAVANA.

APPROXIMATELY 60 members of the AMERICAN PHARMACEUTICAL ASSOCIATION and members of their families went to Havana from Miami on Saturday, August 1st, and spent three very interesting days there.

The visitors were met at the pier by a delegation of Cuban pharmacists headed by Dr. José P. Alacan and escorted to the National Pharmaceutical Association Building. Addresses of welcome were made by the Mayor of Havana, Dr. A. P. André, Dr. José P. Alacan, President M. F. Garrido and Secretary J. Capoté Diaz of the National Pharmaceutical Association of Cuba, and responses were made by President Walter D. Adams and Chairman E. Fullerton Cook, of the U. S. P. Revision Committee. The hospitalities of Miami pharmacists and their families by no means endèd with the close of the convention; only fear of omitting one or more of the good friends prevents naming the delegation who accompanied the pharmaceutical visitors to Havana; the joyful welcome of Havana pharmacists added to the delight of the visitors. On Tuesday night a meeting of members of the AMERICAN PHARMACEUTICAL ASSOCIATION was held, at which time the Cuban pharmacists heard reports of the Miami meeting and discussed the 5-year pharmacy course to be made effective in Cuba. A young lady, engaged in the Spanish translation of the U. S. P. XI, acquainted the visitors with what was spoken in the several addresses.

Visits were made to points of interest—Columbus Cathedral, the beautiful new Capitol, the Centro Asturiano Hospital, one of the most complete hospitals of the Western Hemisphere. The point of greatest interest, perhaps, was Morro Castle. Botanical and tropical gardens were visited and a whole day was devoted to a country trip—Matanzas, Yumuri Valley, Bellamar Caves. At Matanzas a typical Cuban luncheon was served.

The visit passed too quickly, for nearly everything was novel and much quite wonderful; Havana was declared not only a beautiful city but clean, due to the absence of smoke. The visitors were enthusiastic relative to their reception and the entertainments provided for them.

THE NATIONAL FORMULARY EXHIBIT AT THE AMERICAN MEDICAL ASSOCIATION CONVENTION.*

PHARMACISTS, who have recognized the recent trend throughout the country toward the development of a better and more effective understanding between pharmacists and physicians, will be interested in the results of the National Formulary exhibit at the recent A. M. A. Convention in Philadelphia.

One hears a great deal about what is the matter with pharmacy, that physicians are not writing prescriptions as formerly or they are writing only for "proprietaries" or "patents," consequently giving pharmacists nothing to do. Undoubtedly, some of these statements are true; they may be all true, but one wonders at times if pharmacists have done their share to prevent the very thing so strongly decried, or whether they have stood by with arms complacently folded, expecting conditions to remain the same for ever and ever. Have they failed to realize that times must change and that if they are to keep abreast of the times they must get in line and follow the new order of things as developed? Have they realized that competition no longer simply asserts itself in the form of a neighborhood pharmacist, but is daily found in many other forms? Have they been waiting for George to do something, not realizing that they could be helpful by a contributory study of confronting problems? The results of the National Formulary exhibit have given proof of conditions that may be improved by coördinated coöperation.

The present N. F. Committee realized when it accepted its task a year ago, that the National Formulary is not used to the extent it should be by the medical profession. Criticism has been made that this standard contains too many preparations that are seldom used; therefore, one of the first things which the Committee did, was to consider the scope of the book and, as a result, the principle of "Admission by use only" was definitely established as a basic principle upon which all admissions were to be considered. At the recent meeting of the Committee this principle was very rigidly followed, so that this particular criticism can no longer obtain in the forthcoming revision. A second criticism to the effect that certain of the preparations are therapeutically valueless has no weight whatever, as the N. F. has never made any claims for therapeutic values for any of its preparations, the idea of the Committee being only to supply formulas and standards for those preparations more or less extensively used by physicians, rightfully allowing the physicians to be their own judges as to whether or not they obtain the desired action from the preparations they prescribe. This policy is in marked contrast to that of the U. S. P. which accepts its items on a basis of proved therapeutic usefulness only.

All of the foregoing helps to explain why those interested in the National Formulary were glad to have the opportunity to prepare an N. F. exhibit at the

* Philadelphia, June 8–12, 1931.

A. M. A. convention. The scientific exhibits of the convention are very strictly and rigidly conducted by the A. M. A. committee in charge. This, of course, is as it should be, for the purpose of these exhibits is to present to the physicians the scientific facts and data which are the result of clinical evidence and research, so that the physicians may be better able to meet their daily problems.

NATIONAL FORMULARY VEHICLES.

Thus, when the opportunity was offered to the N. F. Committee, the question immediately arose—"what would be of the greatest value and the most help to the physicians in meeting their daily needs?" With this in mind, it was finally decided to present some of the elixir and syrup vehicles of the N. F., preparations which have no therapeutic value whatever, pleasant vehicles or flavoring agents for some of the more disagreeable substances prescribed in prescriptions. It was deemed that this was a very important group of preparations as far as physicians are concerned, for it is desirable that preparations should, if possible, be palatable. These preparations concern pharmacists, for the art of the pharmacist includes the making or preparing elegant preparations for the physicians' use, and these elixirs and syrups well exemplify this art.

Eight elixirs and six syrups were finally selected for the display. One quart—glass labeled—bottles were filled with freshly made material. Then an attempt was made to select a salt, the normal disagreeable taste of which would be covered or masked by the elixir or syrup in question. In several cases, with a given salt, a particular syrup or elixir proved to be practically a specific for vehicle purposes. In other cases, however, the vehicle had no specific value over another in this respect; in these instances sodium bromide was duplicated, as it represented one of the "saltiest" of salts and gave an opportunity to see just what the selected elixir could be expected to do. Four-ounce bottles of these type-prescriptions were prepared and placed beside the corresponding vehicle.

The booth, as supplied by the A. M. A., measured 7 by 10 feet, with a compo board background. A one-foot shelf two and one-half feet above the floor extended around the three sides of the booth. As this shelf was too low for our purpose, a six-inch shelf was raised about nine inches above it and the vehicles and prescriptions were placed on this second shelf, where they could readily be examined.

Fastened to the wall above each vehicle was a neatly lettered card, 11 by 28, which carried the official Latin title of the vehicle, followed by the alcoholic content. Beneath this was a list of the ingredients entering into the preparation, then a brief statement of the characteristics and particular value or use of the vehicle. Finally, neatly blocked off, was a copy of the prescription mentioned above. Running across the top of the booth on each side was a large strip sign, carrying a short message, easy to read, and thus drawing attention to the exhibit. The one at the rear carried the information:

"National Formulary."—Elixirs, Vehicles, Syrups.—A selection of flavors—colors—odors and solvents. For use in Prescriptions.

Other signs on each side read: N. F. scope.—Preparations used by physicians in prescriptions.

Prescribe N. F. Preparations.—Known formulas, uniform, reliable, ethical.

A neat library table occupied a position in the center of the booth. Upon

this was placed an open copy of the National Formulary and card, 14 by 22, carrying a message covering the scope and use of the Standard, as follows:

> The National Formulary.—"....designed to supply definite formulas for preparations that are sufficiently used in medical practice, for which formulas are not included in the Pharmacopœia of the United States, and to provide standards and tests for identity, quality and purity of the essential ingredients used in these formulas for which standards are not provided in the U. S. P.—so that uniformity in the physical properties and therapeutic action of the constituents and of the preparations will be assured."
>
> While the National Formulary makes no claims regarding remedial action of any drug or preparation, its standards for quality and purity are legally recognized by the Federal Food and Drugs Act.
>
> Use by the medical profession governs admissions.

As an additional drawing card, and at the same time giving the physician some tangible message to carry away with him, the high spots of the vehicles on display were outlined in a neatly printed four-page folder; the title page of this folder read as follows:

> Notes for the Physician from the National Formulary. Published by the AMERICAN PHARMACEUTICAL ASSOCIATION, Baltimore, Maryland.

The two inside pages were devoted to the vehicle data as follows:

Vehicles of the National Formulary.—Among the many preparations offered to the prescribing physician by the National Formulary, the flavoring agents or vehicles present many possibilities of interest. They offer variations in taste and color. Some are alcoholic, others aqueous. Thus the thoughtful physician is able to prescribe intelligently and also to vary his prescription, as he desires, from time to time. A few of the more interesting vehicles were presented, giving characteristics and the medicines for which these were best adapted.

Fifty N. F. preparations, extensively used, were listed with the statement that they were the fifty most popular National Formulary preparations named in the prescription survey of the "Charters' Report," a nation-wide survey of the profession of Pharmacy sponsored by the Commonwealth Foundation.

ENCOURAGING RESULTS.

The results were most encouraging; some one was in constant charge of the booth and there was hardly a quiet moment during the day. The striking thing emphasized over and over during the entire week, was the response of the physician to what was being shown. His eagerness to receive the very information being presented and his enthusiasm over the possibilities of these elixirs and syrups in his own practice was freely evidenced. The greater number of the physicians were unaware that such a group of vehicles were available for their use, and time after time one could hear the exclamation, "Say, these are great! Why haven't you shown us these preparations before? Why can't I get information like this?" Or, a physician would approach the booth, reading the large card as he did so, then stop and slowly take in the entire lay-out, the complete story, as he read the smaller cards. Several of them said: "If I want to give prolonged medication I can change from one of these to another each week and make my prescriptions much more pleasant to take." They examined each preparation, noting the odor and taste of the product, using the small paper spoons provided for that purpose.

As a result there were many expressions of appreciation because of the varying applications. The possibilities were freely explained, how the vehicles could be selected for color and flavor.

Not once during the week was a derogatory comment heard against the National Formulatory or any of its preparations. On the other hand, the information which was handed out was received and accepted with thanks. While the prescriptions shown were only prepared to give a general idea and to bring out the use of the vehicles, still each and every title was carefully noted. This was particularly true with the younger men, those just finishing their college training. They were more than eager to get ideas for prescriptions and methods of prescribing, and became aware of the fact that the medical schools to-day teach very little therapeutics. Thus a real opportunity is presented in this one field for some "detailing" on official products.

The matter of "detailing" was roundly scored time after time, and those in charge of the booth were asked why products of the N. F. type could not be brought to the attention of the physicians, who would only too gladly swing into prescribing official products if they knew half as much about them as they did of the articles now being detailed.

While it has been mentioned that the N. F. itself was not criticized, on several occasions physicians called attention to the fact that when they did prescribe N. F. products, they had difficulty in obtaining them. Comment on this is hardly necessary. Any pharmacist interested in pharmacy at all will surely make up, or obtain in some way, official products called for on a prescription.

Before the week was over, an opportunity was found to discuss the results of the N. F. booth with those in charge of the exhibit, and assurance was given that space in future exhibits would gladly be granted the National Formulary, providing there were preparations of the same high calibre as those shown this year. Those who are familiar with the N. F. know that it contains many products which merit consideration and it is hoped that the A. M. A. Convention each year will find the National Formulary on exhibit, bringing professional pharmacy and pharmacists into closer touch with the medical profession throughout the country.—ADLEY B. NICHOLS.

CABLE NOTIFICATION AND RESPONSE OF HONORARY PRESIDENT, HENRY S. WELLCOME.

Baltimore, August 8, 1931.

Henry S. Wellcome,
London, England.

Am pleased to advise your election as Honorary President of AMERICAN PHARMACEUTICAL ASSOCIATION. Congratulations.

(Signed) E. F. KELLY (Secretary, A. PH. A.).

London, August 11, 1931.

E. F. Kelly, Secretary, A. PH. A.,

Deeply appreciate the honor conferred upon me by the AMERICAN PHARMACEUTICAL ASSOCIATION. My hearty greetings and best wishes for continued success in raising standard of scientific ethical pharmacy.

(Signed) HENRY S. WELLCOME.

SCIENTIFIC SECTION

STUDIES IN EXTRACTION AS APPLIED TO N. F. PREPARATIONS.* (PRELIMINARY REPORT ABSTRACTED.)

BY EARL GUTH AND H. A. LANGENHAN.[1]

A criterion to be used for the selection of the proper menstruum for the preparation of a fluidextract or other extractive galenicals is being sought for. It was suggested that little information could be found in the literature that would be applicable to this problem, *viz.*, that of determining which menstruum should be used for extracting a certain drug and why this particular menstruum is the desirable one. Hence a review of the literature was not undertaken. The first attempt toward possibly simplifying the problem was to tabulate the vegetable drugs used in the preparation of N. F. fluidextracts, together with their constituents, as reported in Wehmer, "Die Pflanzenstoffe," Culbreth, Materia Medica and the National Standard Dispensatory. This compilation containing 100 drugs covered 50 typewritten pages. It had been hoped that the tabulation of the constituents would enable a grouping of this large number of drugs, into alkaloidal, resinous, starchy, etc., so that investigation of a representative of each group might be started. However, with the exception of a few, the percentage content of constituents was not recorded and a grouping was not feasible. It had been suggested that one possible procedure was to extract certain drugs with various alcoholic strength menstrua and based upon the total amount of extractive or the amount of active ingredient, found in the percolate, the desirable menstruum be selected. Hence, the first experiment consisted of percolating 100 Gm. of the drug with 95 per cent, 85 per cent and 75 per cent alcoholic menstrua, respectively, collecting the percolate in fractions of 85 cc., 100 cc. and 100 cc. Then determining the specific gravity and total extractive of each fraction and comparing this with the total extractive of the drug, the latter being determined according to the U. S. P. method for "total extractive." Table I illustrates this type of experimentation. The total extractive column points toward an increase in total extractive with the decrease of alcohol in the menstruum. However, the per cent of total extractive removed by the first 85 cc. of percolate decreases noticeably with the decrease in alcoholic content of the menstrua in Jalap, Angelica and Cocillana. The last column indicates that a total of 285 cc. of percolate was not enough to remove all of the extractive. The first 85-cc. fraction of percolate was collected at the rate of 10 drops per minute and the remaining two fractions at the rate of 20 drops per minute. In each series an attempt was made to introduce similar conditions of procedure.

The second attempt consisted of applying the same procedure of extraction to drugs containing measurable constituents. Jalap, a resinous drug, and Nux Vomica, an alkaloidal drug, were used. The U. S. P. methods of assay were used for both drugs. Early in the experimentation the question arose as to whether some of the potassium citrate used in the U. S. P. method for assay of Jalap, was

* This work was aided by a grant received from the AMERICAN PHARMACEUTICAL ASSOCIATION Research Fund.

[1] University of Washington, College of Pharmacy, Seattle.

TABLE I.

Drug.	Menstruum % alcohol.	Total extractive.	1st Fraction. Gm. extd.	Sp. gr.	85 cc. % of total ext.	2nd Fraction. Gm. extd.	Sp. gr.	100 cc. % of total ext.	3rd Fraction. Gm. extd.	Sp. gr.	100 cc. % of total ext.	% of total extractive extracted.
Jalap No. 1	95	11.85	7.4070	0.8626	62.5	1.1090	0.8296	9.3	0.5491	0.8269	4.6	76.4
Jalap No. 2	95	11.85	8.2322	0.8751	86.9	0.9400	0.8279	8.8	0.4790	0.8258	4.0	81.4
Jalap No. 3	85	16.50	9.9344	0.8923	60.2	3.2445	0.8681	19.6	2.0235	0.8625	12.2	92.0
Jalap No. 4	85	16.50	9.0914	0.8911	55.1	3.1855	0.8679	19.4	2.1895	0.8649	13.2	87.9
Jalap No. 5	75	22.68	5.3281	0.9182	23.9	5.6670	0.9025	24.9	2.4300	0.8890	10.5	69.3
Jalap No. 6	75	22.68	8.9271	0.9227	39.2	5.1785	0.9018	22.8	2.8245	0.8910	12.4	74.4
Mandrake No. 1	95	9.56	6.5001	0.8659	68.0	0.9585	0.8245	10.0	0.3930	0.8202	4.1	82.0
Mandrake No. 2	95	9.56	6.8535	0.8689	71.6	0.9540	0.8253	9.9	0.4110	0.8204	4.3	85.9
Mandrake No. 3	85	13.42	8.3963	0.8905	62.6	2.2945	0.8628	17.9	2.2195	0.8741	16.5	97.0
Mandrake No. 4	85	13.42	8.1834	0.8880	61.0	2.5890	0.8651	19.2	2.8330	0.8673	21.1	101.0
Mandrake No. 5	75	15.73	11.0058	0.9194	69.8	3.4390	0.8892	19.6	0.9390	0.9013	5.95	95.0
Mandrake No. 6	75	15.73	11.7013	0.9223	75.0	3.4325	0.8881	19.6	0.9420	0.8776	6.0	101.6
Angelica No. 1	95	8.91	5.2891	0.8463	59.3	2.4655	0.8293	27.9	1.0925	0.8247	12.2	99.4
Angelica No. 2	95	8.91	4.9538	0.8429	55.6	2.5600	0.8295	28.9	1.2635	0.8235	14.2	98.7
Angelica No. 3	85	25.68	7.7902	0.8774	30.3	6.8745	0.8773	26.7	5.0860	0.8729	19.7	76.7
Angelica No. 4	85	25.68	7.9520	0.8773	30.9	6.8365	0.8757	26.5	5.3955	0.8738	21.0	78.4
Angelica No. 5	75	31.97	11.2413	0.9237	35.1	10.8640	0.9156	34.8	5.2445	0.8996	16.4	86.3
Angelica No. 6	75	31.97	11.1027	0.9218	34.7	10.7265	0.9172	34.4	5.2595	0.9020	16.7	85.0
Calendula No. 1	95	18.08	5.6610	0.8507	31.2	4.3040	0.8608	23.8	3.5755	0.8299	19.7	74.7
Calendula No. 2	85	27.57	6.5084	0.8754	23.6	5.9465	0.8746	21.5	3.6710	0.8668	13.8	68.9
Calendula No. 3	75	29.85	9.2833	0.9171	33.8	6.7630	0.9070	22.6	4.1235	0.8883	13.7	70.1
Cocillana No. 1	95	3.61	1.8798	0.8364	52.0	0.6350	0.8213	17.5	0.2785	0.8204	7.7	77.0
Cocillana No. 2	85	4.15	2.2686	0.8608	54.6	1.1275	0.8534	27.1	0.5350	0.8514	12.8	94.5
Cocillana No. 3	75	6.54	2.7548	.....	42.1	1.0550	.....	16.1	0.5415	.....	8.2	66.4

included in the final residue representing the resin. The residues upon ignition yielded an ash which was alkaline to phenolphthalein. This suggested the presence of water-soluble potassium citrate. The U. S. P. method was modified to the extent of washing the dried and weighed residues with hot water, then drying and again weighing. The latter showed a loss in weight. (See Table II.) It must be remembered that the resin is a complex substance and that water-soluble constituents may have been removed by the alcohol of the alcohol-chloroform mixture during the assay, also that the heat during the drying of the residue may have introduced a change of solubility. However, it is safe to assume that some potassium citrate is carried over and computed as resin. As a check the Jalap was also assayed according to the B. P. method, and the liquid extracts assayed according to the B. P., U. S. P. and U. S. P. modified, methods; the modification consisting of the washing just mentioned. Table No. 3 presents the results of this experiment. Assuming that 285 cc. of percolate did not represent complete extraction (as is indicated in Table No. 1.) the results obtained from the assay of the Jalap percolates offer an interesting condition in that the amount of resin found in the 75 p. c. alcoholic extraction tends to be greater than that found in the original drug. That is it would appear as if the 75 per cent alcoholic menstruum removes more 95 per cent alcohol-soluble constituents than does the 95 per cent alcoholic menstruum.

Table IV illustrates the extraction experiment applied to Nux Vomica. Because of lack of time the drug itself was not assayed.

TABLE II.—ASSAY OF JALAP.

	% resin U. S. P. method.	% resin after washing.	% lost.
Sample No. 1	7.26	6.52	0.72
	7.45	6.62	0.83
	7.37	6.69	0.68
	7.47	6.70	0.77
	7.22	6.64	0.58
	7.16	6.36	0.80
	7.54	6.33	1.22
	7.21	6.51	0.71
Average	7.33	6.54	0.79
Sample No. 2	13.53	11.45	2.08
	12.40	11.63	0.97
Average	12.96	11.54	1.42

TABLE III.—ASSAY OF JALAP PERCOLATES.

	U. S. P.		U. S. P. Mod.		B. P.	
	No. 1	No. 2	No. 1	No. 2	No. 1	No. 2
95% alcohol.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.
85 cc.	11.52	11.68	10.95	10.96	11.13	11.29
100 cc.	0.74	0.67	0.46	0.46	0.55	0.33
100 cc.	0.16	0.14	0.01	0.03	0.08	0.07
Total	12.42	12.49	11.43	11.45	11.76	11.79
85% alcohol.						
85 cc.	10.58	11.57	9.58	10.47	10.45	10.96
100 cc.	0.79	1.99	0.44	0.58	0.46	1.65
100 cc.	0.29	0.32	0.03	0.03	0.05	0.04
Total	11.66	14.12	10.05	11.08	10.96	12.65

75% alcohol.						
85 cc.	12.46	11.72	11.08	10.38	11.31	11.26
100 cc.	1.04	1.24	0.18	0.83	0.80	0.80
100 cc.	0.42	0.22	0.03	0.03	0.04	0.03
Total	13.92	13.18	11.29	11.24	12.15	12.09

Assay of drug:

U. S. P. Method 12.96% Resin
U. S. P. Method mod. 11.54% Resin
B. P. Method 11.55% Resin

TABLE IV.—ASSAY OF NUX VOMICA PERCOLATES.

	73% Alcohol.		64% Alcohol.		49% Alcohol.	
	No. 1.	No. 2.	No. 1.	No. 2.	No. 1.	No. 2.
85 cc.	1.39	1.29	1.31	1.32	1.45	1.51
100 cc.	0.46	0.45	0.38	0.34	0.63	0.55
100 cc.	0.10	0.11	0.14	0.12	0.12	0.12
Total	1.95	1.85	1.83	1.78	2.20	2.18

Attention was now given to the alcoholic strength of menstrua. Tables showing the drugs (U. S. P. & N. F.) extracted with the same alcoholic content menstruum were prepared with the hopes that such a grouping might offer some reason as to the selection of a certain menstruum for a certain drug. Unfortunately no conclusions could be drawn from these compilations.

The menstrua prescribed by the N. F. V for the manufacture of fluidextract, represent 13 different alcoholic concentrations. Some of these vary only by 2 to 3 per cent of alcohol. Scoville (N. F. Revision Bulletin) suggested using a fewer number of concentrations and offered 9 concentrations. Table V represents the N. F. menstrua. The alcohol content is computed based on 95 per cent alcohol, making no allowance for shrinkage. Table VI represents the concentrations suggested by Scoville. The percentage of alcohol was computed based on 95 per cent alcohol and also determined, and an attempt made to account for the difference between the computed and determined by measuring the shrinkage. As the units of volumes used in the shrinkage experiment were small, these results may be considered as approximate.

TABLE V.—APPROXIMATE PERCENTAGE OF ALCOHOL IN THE MENSTRUA NOW USED IN THE N. F. FOR THE MANUFACTURE OF FLUIDEXTRACTS.

Alcohol.		Water.	% of alcohol in menstrua.	Difference in alcoholic, %.
1 Vol.	to	0 Vol.	95	00
5 Vol.	to	1 Vol.	80	15
4 Vol.	to	1 Vol.	76	4
3 Vol.	to	1 Vol.	73	3
2 Vol.	to	1 Vol.	64	9
5 Vol.	to	3 Vol.	60	4
3 Vol.	to	2 Vol.	58	2
1 Vol.	to	1 Vol.	49	9
3 Vol.	to	4 Vol.	41	8
2 Vol.	to	3 Vol.	39	2
1 Vol.	to	2 Vol.	33	6
1 Vol.	to	3 Vol.	24	9
0 Vol.	to	1 Vol.	00	16

The following table shows the actual percentage of alcohol in each of the menstrua as suggested by Scoville.

TABLE VI.

Alcohol.		Water.	Sp. gr.	% alcohol corrected for temp.	Scoville's table of percentage.	Computed percentage.
1 Vol.	to	0 Vol.	0.8076 (21° C.)	95.9	95	95.0
9 Vol.	to	1 Vol.	0.8354 (23° C.)	86.5	86	85.5
4 Vol.	to	1 Vol.	0.8611 (23° C.)	78.8	77	76.0
3 Vol.	to	1 Vol.	0.8741 (23° C.)	73.6	73	71.2
2 Vol.	to	1 Vol.	0.8938 (23° C.)	65.5	64	63.3
1 Vol.	to	1 Vol.	0.9289 (23° C.)	49.2	49	47.5
1 Vol.	to	2 Vol.	0.9557 (23° C.)	32.5	33	31.7
1 Vol.	to	3 Vol.	0.9667 (23° C.)	26.1	24	23.7
1 Vol.	to	7 Vol.	0.9799 (23° C.)	13.6	12	13.6

Shrinkage of Menstrua.

Alcohol.		Water.	Shrinkage.
1 Vol.	to	0 Vol.	0.00%
9 Vol.	to	1 Vol.	.....
4 Vol.	to	1 Vol.	2.60%
3 Vol.	to	1 Vol.	3.12%
2 Vol.	to	1 Vol.	4.00%
1 Vol.	to	1 Vol.	5.00%
1 Vol.	to	2 Vol.	3.30%
1 Vol.	to	3 Vol.	2.00%
1 Vol.	to	7 Vol.	

The reduction of the menstrua from 13 in number to 9 would call for some readjustment. Nine of the drugs would be affected by this change. In order to estimate the possible effect of this change, the total extractive of those of the 9 drugs on hand, was determined, using the official menstrua and the proposed menstrua nearest in alcohol content. Table VII contains the results of this experiment.

As a possible criterion the "total solids" of a complete line of N. F. fluidextracts (78 in number) was determined. For comparison the total solids of the commercial fluidextract is included in Table VII.

TABLE VII.

Drug.	N. F. Menstrua. Per cent alcohol.	N. F. Menstrua. Per cent extractive.	Proposed Menstrua. Per cent alcohol.	Proposed Menstrua. Per cent extractive.	Com'l fldexts., Gm. extractive in 100 cc.
Angelica	79	31.42	77	30.45	7.25
Apocynum	58	13.41	64	14.36	14.88
Avena Sativa	38	...	33	...	...
Cataria	40	...	49	...	...
Digitalis	79	27.28	77	30.3	20.40
Geranium	58	24.15	64	23.25	23.70
Humulus	61	33.81	64	30.21	...
Hydrangea	58	11.86	64	11.87	6.50
Kava	58	9.45	64	9.01	4.25

SWELLING OF DRUGS.

The following experiment was conducted in an attempt to measure the swelling taking place when dried vegetable drugs are allowed to macerate in various alcoholic menstrua. Jalap, Angelica, Ipomea and Colombo were chosen as the drugs to be used.

TABLE VIII.—GRAMS OF TOTAL EXTRACTIVE PER 100 GM. OF DRUG.

Per cent alcohol.	95%.	86%.	77%.	73%.	64%.
Adonis	10.20 Gm.	14.69 Gm.	16.91 Gm.	19.45 Gm.	20.95 Gm.
Arnica	10.38 Gm.	17.04 Gm.	17.91 Gm.	20.75 Gm.	21.38 Gm.
Boldus	12.88 Gm.	17.37 Gm.	25.31 Gm.	25.21 Gm.	25.75 Gm.
Castanea	8.38 Gm.	14.24 Gm.	18.65 Gm.	20.61 Gm.	22.37 Gm.
Chirata	7.30 Gm.	11.74 Gm.	13.66 Gm.	14.75 Gm.	15.43 Gm.
Columba	3.73 Gm.	7.20 Gm.	11.56 Gm.	12.74 Gm.	13.32 Gm.
Calendula	21.33 Gm.	27.18 Gm.	29.62 Gm.	31.00 Gm.	31.86 Gm.
Canadian Hemp	7.86 Gm.	12.05 Gm.	13.39 Gm.	15.08 Gm.	14.62 Gm.
Cubeb	10.42 Gm.	15.22 Gm.	14.91 Gm.	17.15 Gm.	16.90 Gm.
Caulophyllum	13.84 Gm.	21.82 Gm.	24.69 Gm.	24.82 Gm.	25.11 Gm.
Coccillana	2.40 Gm.	3.68 Gm.	5.16 Gm.	5.57 Gm.	6.81 Gm.
Condurango	8.66 Gm.	13.22 Gm.	14.65 Gm.	16.59 Gm.	16.36 Gm.
Guarana	6.09 Gm.	23.27 Gm.	25.72 Gm.	26.03 Gm.	26.28 Gm.
Hydrangea	5.52 Gm.	9.28 Gm.	10.75 Gm.	11.52 Gm.	11.07 Gm.
Jalap	16.55 Gm.	18.85 Gm.	22.17 Gm.	23.14 Gm.	23.72 Gm.
Kava	4.09 Gm.	7.21 Gm.	6.40 Gm.	7.16 Gm.	6.71 Gm.

Per cent alcohol.	49%.	33%.	24%.	12%.
Adonis	25.44 Gm.	30.83 Gm.	31.84 Gm.	32.92 Gm.
Arnica	23.00 Gm.	23.23 Gm.	22.62 Gm.	22.88 Gm.
Boldus	26.35 Gm.	26.38 Gm.	28.55 Gm.	23.07 Gm.
Castanea	22.45 Gm.	22.91 Gm.	23.06 Gm.	22.75 Gm.
Chirata	16.35 Gm.	14.89 Gm.	15.67 Gm.	15.63 Gm.
Columba	15.05 Gm.	15.80 Gm.	15.85 Gm.	16.65 Gm.
Calendula	31.10 Gm.	27.15 Gm.	26.01 Gm.	25.56 Gm.
Canadian Hemp	13.49 Gm.	13.15 Gm.	13.62 Gm.	12.20 Gm.
Cubeb	16.89 Gm.	14.83 Gm.	13.53 Gm.	12.13 Gm.
Caulophyllum	25.60 Gm.	22.85 Gm.	19.97 Gm.	20.26 Gm.
Coccillana	7.60 Gm.	7.55 Gm.	7.32 Gm.	7.52 Gm.
Condurango	18.10 Gm.	17.38 Gm.	17.95 Gm.	17.27 Gm.
Guarana	25.72 Gm.	25.30 Gm.	24.46 Gm.	24.19 Gm.
Hydrangea	10.95 Gm.	11.99 Gm.	12.39 Gm.	11.99 Gm.
Jalap	29.98 Gm.	27.36 Gm.	23.34 Gm.	23.72 Gm.
Kava	6.64 Gm.	6.61 Gm.	5.64 Gm.	6.06 Gm.

The drugs were sifted in a series of sieves until an 80 or 100 powder was obtained. A small portion of each powder was macerated in small well-stoppered vials for 30 minutes with the following menstrua: Absolute, 95%, 85% and 75% alcohol and distilled water. At the end of 30 minutes a small amount of each drug was mounted on a microscope slide in the same menstrua in which it had been macerated, covered with a cover glass and the particles measured with a micrometer ocular. 350 measurements of drug of each maceration were made and an average taken. The measurements represent the average width of the drug particles after maceration. In macerating the drugs in the closed vials only enough menstruum was added in each case to make the drug distinctly moist. The results of the experiment follow:

	Absolute alc.	95% Alc.		85% Alc.		75% Alc.		Water.	
Jalap No. 80 powder	201.8	212.0	5.05	218.3	1.74	222.1	9.72	243.7	27.0
Angelica No. 100	160.0	164.4	2.75	168.1	0.95	169.7	19.26	202.4	26.5
Ipomea No. 80	172.7	168.8	2.31	175.9	6.08	186.6	10.39	206.1	19.3
Colombo No. 80	255.5	258.5	1.17	270.8	1.08	267.9	17.29	314.2	22.9

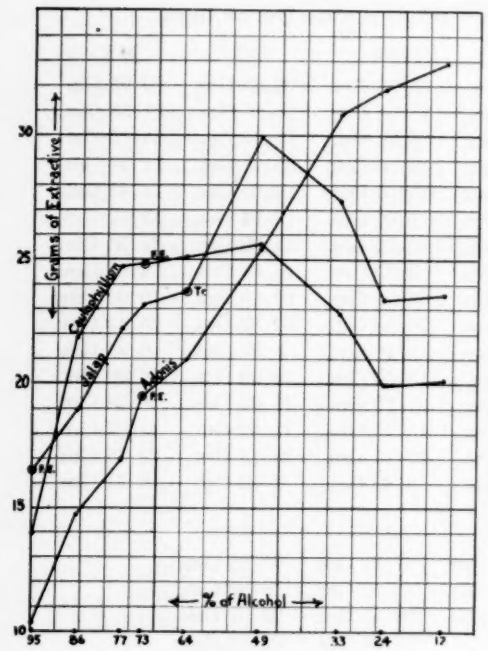

Fig. 1.

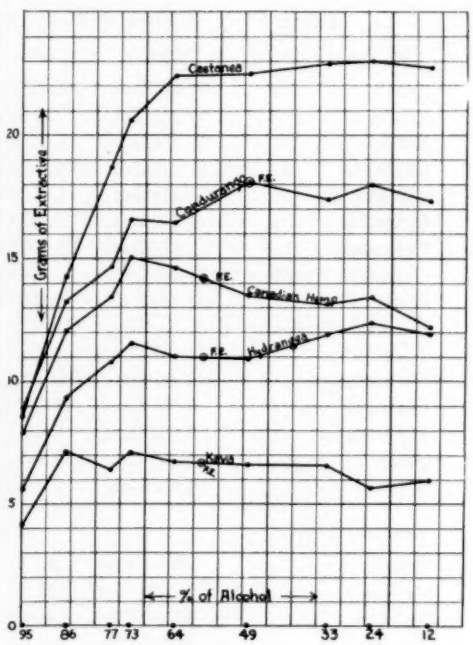

Fig. 2.

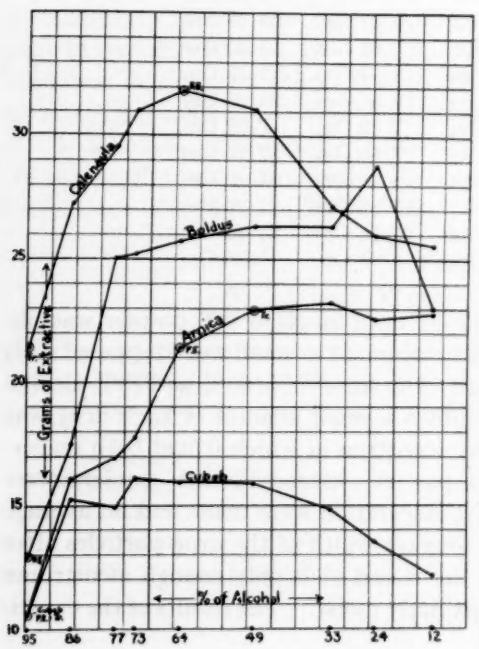

Fig. 3.

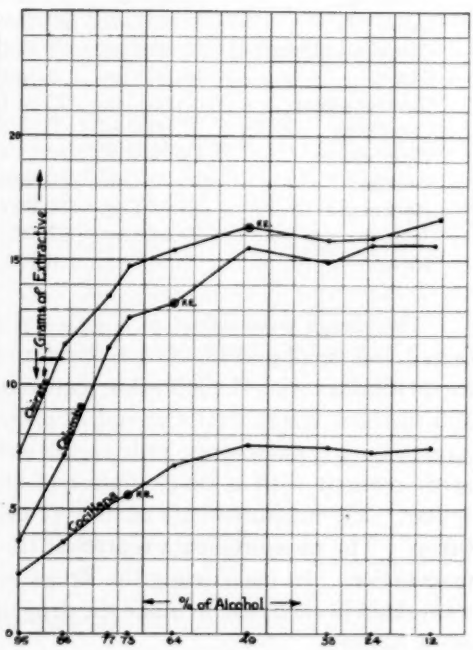

Fig. 4.

The Jalap used contained 8.51 p. c "moisture" as determined by the U. S. P. method. A quantity was dried at 105° C. for 24 hours and then treated with the menstrua as above mentioned. Two different samples of this dried lot were used,

and only counts of 100 each were made in place of 350 as before. The results of the air-dried drug measurements are as follows:

		Absolute.	95%.	85%.	75%.	Water.
Jalap No. 80 powder,	(1)	201.6	202.0	210.5	216.8	238.3
Oven dried	(2)	188.9	192.0	202.5	209.9	242.6
Average		195.25	197.4	206.5	313.35	240.45

Graphs were made representing the increase in the size of the particles. However, these failed to offer any additional information. The results obtained so far would tend to indicate that this method of measurement is unsatisfactory.

TOTAL EXTRACTIVE EXPERIMENT.

Fifteen vegetable drugs were selected at random for the determination of the total extractive, applying the U. S. P. method and using the nine proposed menstrua already mentioned. The results are presented in tabulated form as well as in graphs. (See Table VIII and charts Nos. 1, 2, 3, 4, 5.) An attempt was made to introduce like laboratory conditions so that the results would be comparable. It must be remembered that time did not permit the checking of these results. Also that the total extractive of vegetable drugs may be influenced by climatic conditions during growth. It was assumed that all samples were dry, *i. e.*, contained the same amount of moisture. Inasmuch as a difference of 2 or 3 p. c. of total extractive is mainly of experimental interest, a difference of 10 p. c. in moisture content would be of similar interest.

The graphs tend to indicate that the total extractive (of the drugs tested) increases as the alcohol content decreases from 95% to 49%. With concentrations below 49% the total extractive seems to decrease. Taking the average total extractive for all given, with the exception of Adonis, the high point is with the 49% concentration. Also, the 77% and the 12% concentrations represent the same levels.

The following table contains the alcohol per cent of the menstruum used giving the highest total extractive, the lowest total extractive and the alcohol per cent of the menstruum used for preparing the fluidextract and the tincture.

Drug.	High.	Low.	Flex.	Tr.
Adonis	12	95	73	
Arnica	49	95	64	49
Boldus	24	95	95	
Castanea	64–12	95	water	
Chirata	49	95	49	
Calumba	12	95	64	58
Cannabis	73	95	58	
Calendula	64	95	64	
Cubeb	73–49	95	95	95
Caulophyllum	77–49	95	73	
Coccillana	49–12	95	73	
Condurango	24	95	73	
Guarana	77–33	95	58	
Hydrangea	24	95	58	
Jalap	49	95	95	64
Kava	73	95	58	

Four of the official menstrua used for preparing fluidextracts represent the high point total extractive menstrua. It must be remembered, however, that an increase in total extractive does not necessarily mean an increase in active constituents. In the experiments already mentioned, an increase in total extractive of Jalap gave a comparable increase in resin as measured by the U. S. P. assay method. Also the same comparable increase is noticeable in the Nux Vomica results. Much more work must be done before any suggestive interpretations may be offered. Furthermore, the amount of total extractive in the fresh percolate is not always the same as in the stabilized product. As a possible illustration the following may be of interest. A commercial fluidextract of Caulophyllum contained 18.0 Gm. total solids in 100 cc. The fluidextract is prepared with 73% alcohol. This concentration removed 24.8 Gm. of extractive. Again, a commercial fluidextract of Arnica contained 14.5 Gm. of total solids. The official menstruum is 64% alcohol representing 21 Gm. of extractive, and the tincture, made with 49% alcohol represents the highest point in the total extractive column. In contradiction to these results, a commercial fluidextract of Guarana contained 28.8 Gm. of total solids which is more than the total solids removed by any of the nine menstrua. Also a commercial fluidextract of Adonis (5.73 Gm.) and of Jalap (9.18) falls below the lowest point of extractive obtained. The question arises as to the amount of sediment formed during the aging of the product. Also as to the therapeutic value of this sediment; with this information available selections of menstrua may be made. Until more is known of the therapeutic constituents of many of the vegetable drugs, the total extractive *remaining in solution* may be used as a criterion. This necessitates the preparation and the aging of fluidextracts prepared with the several menstrua. Such experimentation is to be undertaken.

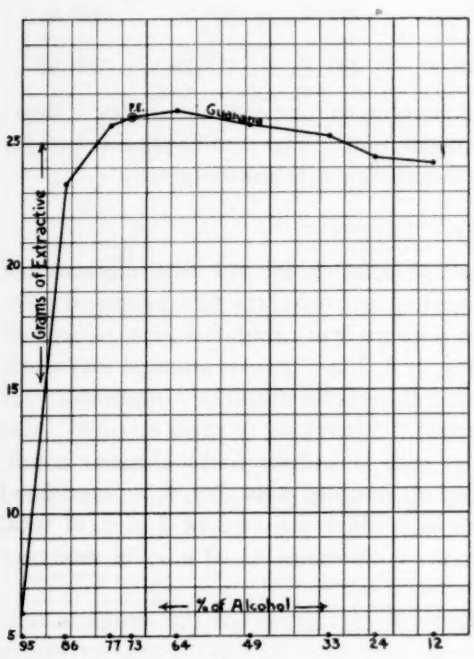

Fig. 5.

TUNG OIL IMPORTS, JUNE 1931.

Imports of tung oil into the United States in June 1931, amounted to 9,484,708 pounds valued at $528,388 as compared with 11,538,789 pounds worth $1,183,470 imported in June 1930, and 10,491,890 pounds valued at $1,304,289 received during the same month in 1929. Total importations of 37,790,623 pounds valued at $2,254,487 were recorded during the first six months of 1931 contrasted with 64,711,480 pounds having a value of $5,969,392 brought in during the corresponding period of 1930.

Cod Liver Oil Imports Greater in 1930.—Imports of cod liver oil into the United States in 1930 amounted to 21,700,000 pounds as compared with 21,450,000 pounds in 1929 and 19,350,000 pounds in 1928.

CHEMICAL STUDY OF SENECIO AUREUS.*

EDGAR A. KELLY AND E. V. LYNN.

The official *senecio* is deserving of investigation if it is at all worthy of being used as a drug. In spite of the facts that *Senecio aureus* is a common plant in the United States, that its use in medicine dates back to days before the first settlers, and that it is an important article of the formulary, apparently no one has ever taken pains to examine it thoroughly from a scientific standpoint. Of the exceedingly numerous species of this genus, several others have received considerable attention, the results of which might tend to show some possible value in medicine, but the properties of *S. aureus* have been entirely unknown. If it is to remain an official article, certainly something should be learned of its composition and physiological action. We have undertaken a study with this in mind, of which the present paper may be considered a preliminary report, and hope to continue it until much more of the chemistry and pharmacology is known.

The genus *Senecio*, as is well known, is the most extensive one in the vegetable kingdom, including as it does upward of one thousand species. These are found in almost all regions on the earth and at various altitudes, although each is individually restricted in range. At least seventy-two species are native in the United States and twenty-seven of these are found in the State of Washington.

S. aureus is indigenous to North America, inhabiting the region from Newfoundland to Florida and west to Ontario, Missouri and Texas. It is commonly known in various localities as golden senecio, ragwort, groundsel, squaw weed, false valerian, grundy swallow, female regulator and life root. The last of these names is recognized by the National Formulary.

The plant was named by Linné in 1753, but for years previously was a favorite with the Indians, who used it as a vulnerary. The white people who first settled in this country learned of its reputation and soon adopted the drug, later applying it also as an emmenagogue. The preparation most often employed was a five per cent infusion or decoction in a dose of two ounces. In 1886 Small introduced the dried herb into medical practice and it eventually became popular with the eclectic and homeopath, On account of the great demand, it was admitted to the National Formulary IV, together with a fluidextract made with diluted alcohol.

There have been a great variety of applications in medicine, some of them apparently little related to the original recommendations. Thus, besides the older employment as healer and as emmenagogue, the drug is now described as stimulant, diuretic, pectoral, antirheumatic, internal hemostatic, etc. It would be interesting to determine, if possible, just how these applications were deduced, considering the absence of published data. It is also interesting to note that a few of the other species have reputations as being valuable for the same purposes, notably *vulgaris*, *jacobæa*, *præcox*, *canicidia*, *albicaulis*, *grayanus* and *cervariæfolius*. Some of them are also employed as purgatives, emetics, hypnotics and antiseptics in epilepsy and in fevers. The chief and most common use of all of them, however, is in the treatment of amenorrhea.

In spite of such diverse reputation, there is little evidence in the literature of value for any of these species. There are occasional references to one of them in

* Scientific Section, A. PH. A., Baltimore meeting, 1930.

medical journals, but these are merely expressions of opinion and give no controlled methods (see 1, 3, 5, 6, 7, 12, 13, 15, 17, 24). An experimental study of *S. jacobæa* was made by Bunch (16) in 1901, showing that injection of an alcoholic extract in dogs caused rise in blood pressure by constriction of the peripheral vessels, but that lowering of pressure and slowing of the heart followed several injections of larger doses. Watery extracts caused circulatory depression only. The action of the excited uterus of the guinea pig by several drugs was investigated by Pilcher (21) in 1916, who found that *S. aureus* gave very little effect.

Poisoning of animals by species of senecio has resulted in a number of inquiries. Debierre (4), in 1889, presented details of the physiological effects of *canicidia*, which is a Mexican species and, as its name indicates, is used to kill dogs. The potent principle, which caused excitability and convulsions, was most abundant in the root. Cushny (20) found experimentally that extracts of *latifolius* and *vulgaris* caused symptoms similar to those of poisoning which had been encountered, but that *jacobæa* and *sylvaticus* were non-toxic, in spite of suspicion which had been entertained against them. Wilncott and Robertson (22) have described the effects in accidental ingestion of *ilicofolius* and *burchelli* as consisting of gastro-enteritis with ascites, and found cirrhosis of the liver at post-mortem. Cushny and Watt (23) made similar findings.

It can be concluded from the foregoing that several of the senecios contain potent principles but that there is no uniformity. As far as can be learned, no one has investigated the toxicity or pharmacology of *aureus*.

CHEMISTRY OF THE GENUS.

S. cānicidia was reported to contain (2) a poisonous organic acid, senecic acid.

S. kāniferi contains an unsaturated acid (8), C_4H_7COOH, which was named seneciocic acid, but nothing is recorded as to its physiological action.

S. vulgaris was examined by Grandval and Lajoux (9), who isolated two alkaloids, senecionine and senecine, the properties of which were described. Lutz (11) found that undergound portions of *jacobæa*, *erucæfolius*, *paludosus* and *cineraria* also gave reactions for these two alkaloids. *Jacobæa* was reported by Altan (18) to contain a glucoside and an unsaturated acid.

From *S. latifolius* Watt (19) extracted two alkaloids, senecifoline and senecifolidine. The analyses and properties of these would lead one to suspect that Grandval and Lajoux may have obtained impure samples of the same compounds.

Muller (25) isolated from *S. fuchsii* an alkaloid, *fuchsisenecionine*, from *S. sylvaticus* a different one, silvasenecine, and from *S. vulgaris* a base whose gold compound was prepared.

OFFICIAL DESCRIPTION.

In the N. F. IV the drug was defined as "the dried, overground portions—gathered when flowering," and was required to yield not more than ten per cent of ash. In the last edition this was changed to read: "the dried plant of *Senecio aureus*," and no standard for ash is included. There may have been good reasons for such alteration, but we have been unable to find any published data which would call for it. The questions which would naturally be elicited are obvious. Which parts of the plant, if any, are potent? Can a definite requirement of maximum

ash be set? Has the activity any relation to time of gathering? Ultimately we hope to answer them.

EXPERIMENTAL.

The material employed in this preliminary work was obtained from a local wholesale house in the form of a very fine powder. It was entirely within the official requirements in every respect, but we have no knowledge of place or time of gathering.

Moisture and Ash.—Samples of the material were dried to constant weight at 110° C. and the loss determined. This varied from 10.66 to 10.92 and averaged 10.76 per cent. They were then ignited and heated according to the U. S. P. method, and the amount of ash was found to be 11.30 to 11.85, with an average of 11.62 per cent. Samples of two other commercial products were found to have 8.33 and 8.76 per cent, respectively. Evidently there is considerable variation in methods of collection or in properties of drug from different localities.

Extraction.—Representative samples were submitted to successive extraction with solvents in the order named. The first two products were brought to constant weight in a desiccator and all of them were finally dried at 110° C. The average results follow in per cent of drug.

	Volatile.	Total.
Petroleum ether	0.56	3.11
Ether	0.45	2.17
Alcohol	..	6.85
Water	..	19.42

All of the extracts were yellow-green to green except that by water which was a black, tar-like mass. The product of alcohol contained crystals, which were found to reduce Fehling's solution and to give the characteristic osazone of glucose.

The Volatile Oil.—When the powdered drug was moistened with water and distilled with steam, there was obtained a milky distillate with a thin film of oil on the surface. This was completely extracted with ether, which was separated, dried with calcium chloride and filtered. The solvent was mostly removed by distillation and the remainder in a vacuum desiccator. From 1000 Gm. of drug there was obtained 2 Gm., or 0.2 per cent of a mobile, yellow oil, which rapidly became more viscid and darker on standing. The characteristic odor gradually became very penetrating and pungent. The taste was sharp and burning; the refractive index at 25° C. was 1.4511. The oil and the aqueous residue both gave a characteristic reaction with aniline acetate for furfural and also for alkaloids by the usual precipitating reagents.

Upon standing the oil deposited yellow, rhombic crystals which melted at 118° C. and burned with the characteristic blue and odorous flame of sulphur. Estimated according to the method in plants as given in the *A. O. A. C.*, the total oil was found to contain 1.22 per cent of this element. It is interesting to note that comparatively few volatile oils contain compounds of sulphur, and they are mostly Liliaceæ or Cruciferæ. As far as is known, no other members of the Compositæ has been found to furnish sulphurous oils.

The Alkaloids.—The drug was exhausted by alcohol, which was filtered, and the alcohol was largely removed by distillation. The residue was extracted repeatedly with two per cent hydrochloric acid, producing a red-brown solution which

gave copious precipitates with Wagner's or Mayer's reagent, and with phosphotungstic acid, phosphomolybdic acid or picric acid. Tannic acid, Dragendorff's reagent, or Marme's reagent gave no reaction. The acid liquid was extracted successively with several immiscible solvents and, after making ammoniacal, again in the same order. The results are given in the following table.

TABLE I.

Acid solution.	Color.	Wagner's.	Mayer's.	Phosphotungstic.	$PtCl_4$.	Picric.
Petroleum ether	Light green	+	None	+	None	None
Benzene	Brown	−	−	−	−	−
Ether	Yellow-green	+	−	+	−	−
Carbon tetrachloride	Yellow	+	−	+	−	−
Carbon disulphide	Colorless	−	−	−	−	−
Chloroform	Yellow	+	+	+	−	−
Amyl alcohol	Red	+	−	+	−	−
Alkaline solution.						
Petroleum ether	Colorless	+	−	−	−	−
Benzene	Colorless	+	−	−	−	−
Ether	Yellow	+	+	+	−	−
Cl_4	Yellow	−	−	−	−	−
CS_2	Yellow	−	−	−	−	−
$CHCl_3$	Yellow	+	+	+	−	+
Amyl alcohol	Yellow	−	−	−	−	−

The ether extract from ammoniacal solution deposited needle-shaped crystals, which were soluble in ether, chloroform or alcohol, but insoluble in water or petroleum ether. After purification, they were found to melt at 112–113° C. and to give no tests for alkaloids. The chloroform extract gave a much larger quantity of crystals which were similar in appearance and melted at the same temperature. Solutions of them in diluted acid gave no positive tests with any of the reagents.

The results indicate that several alkaloids are contained in senecio, some of them so weakly basic that they can be extracted from acid solution. Ether and chloroform are seen to be the best solvents.

Volatile Alkaloids.—The residual marc, left after separation of the volatile oil, was made alkaline with sodium carbonate and distilled with steam. The distillate was milky and had a film of oil on the surface. It gave positive reactions with Wagner's reagent and with phosphotungstic acid. Attempts to collect the precipitate in the latter case by centrifuging and filtration were unsuccessful because it was too finely divided. Extractions with ether gave a small amount of yellow oil which gave precipitates with the alkaloidal reagents. Evidently part or all of the bases present in the drug are volatile with steam.

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THE PREPARATION OF DILUTED HYDRIODIC ACID AND SYRUP OF HYDRIODIC ACID.*

BY WILLIAM J. HUSA.**

INTRODUCTION.

The purpose of this paper is to present some practical formulas for the preparation of Diluted Hydriodic Acid and Syrup of Hydriodic Acid by the retail pharmacist. In order that the problem may be viewed in the proper perspective, it will be well to begin with a brief summary of earlier work in this field which has a bearing on the present discussion.

HISTORICAL REVIEW.

Discovery of Iodine and Hydriodic Acid.—Following the discovery of the element, iodine, by the French pharmacist, Courtois, in 1811, hydriodic acid was first recognized by Clement and Desormes (1) in 1813. In the following year, Gay-Lussac (2) prepared hydrogen iodide by passing a mixture of hydrogen and iodine through a red hot tube.

Introduction of Iodine and Hydriodic Acid into Medicine.—Shortly after the discovery of iodine, Coindet (3) suspected that this element was the active constituent of the ashes of sponges, which had long been used empirically in the treatment of goiter and scrofula, and after proving this to his own satisfaction he introduced iodine into medicine. Due to its irritant action, iodine frequently caused severe gastric disturbances, and to overcome this undesirable effect, Dr. Andrew Buchanan (4) of Edinburgh, in 1837, introduced the use of hydriodic acid, which he prepared by the action of tartaric acid upon potassium iodide.

Official Recognition of Preparations of Hydriodic Acid.—Diluted Hydriodic Acid was introduced into the U. S. P. of 1860, was omitted in 1870 and 1880, but was again included in the 8th, 9th and 10th revisions. The method of prepara-

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tion first recognized by the U. S. P. consisted in passing hydrogen sulphide into a mixture of iodine and water; when the liquid had become colorless it was filtered to remove the sulphur which had precipitated and the filtrate was heated to drive off the remaining hydrogen sulphide.

In the U. S. P. of 1880, the Committee of Revision introduced Syrup of Hydriodic Acid, which was made by dissolving iodine in alcohol, mixing with syrup, passing in H_2S, filtering and driving off the H_2S at a temperature not exceeding 55° C. The first edition of the National Formulary, published in 1888, contained a formula for Colorless Syrup of Hydriodic Acid, which was prepared from potassium iodide, potassium hypophosphite, tartaric acid, water, diluted alcohol and syrup, this formula being a modification of Buchanan's original method. A similar formula was adopted by the U. S. P. of 1890. In these methods the hydriodic acid was made in the course of the preparation of the syrup, but later a method of preparation of the acid was given only under the title of Diluted Hydriodic Acid, and the syrup was directed to be made from the diluted acid. Thus the U. S. P. IX formula for Syrup of Hydriodic Acid was as follows: "Diluted Hydriodic Acid, 125 mils; Distilled Water, 300 mils; Syrup, 575 mils, to make 1000 mils." In the U. S. P. X, the syrup was replaced by 450 Gm. of sucrose, thus slightly reducing the percentage of sucrose in the finished preparation.

The British Pharmacopœia of 1914 recognizes a Diluted hydriodic acid containing 10% of HI and 1% of hypophosphorous acid. Exact details of preparation are not given but it is stated that "It may be obtained by the action of hydrogen sulphide on a solution of iodine, with the subsequent addition of hydrogen hypophosphite." The formula for the Syrup of Hydriodic Acid, B. P. is as follows: "Diluted hydriodic acid, 100 Gm.; Distilled water, 50 ml.; Syrup, q. s. 1000 ml."

Aside from the U. S. P. and B. P., no other pharmacopœias recognize hydriodic acid or its preparations.

DISCUSSION AND RECOMMENDATIONS.

The fact that Syrup of Hydriodic Acid becomes discolored in the course of time has led to a great deal of work by pharmacists and manufacturers on methods of improving the stability. Among the stabilizers tried are hypophosphites, thiosulphates, sulphites, sugar, rock candy, glucose and glycerin. It is now generally conceded that the brown color which appears is caused primarily by caramelization of the sugar, although free iodine may appear after the hypophosphorous acid has been completely oxidized. In some of the papers on the subject, statements are made to the effect that stable preparations of Syrup of Hydriodic Acid have been obtained by various expedients, but these statements must be largely discounted in view of the fact that in recent years a committee of the Scientific Section of the American Drug Manufacturers' Association has investigated this subject and has not been able to develop a formula that was very satisfactory over a period of time (5) (6).

If the retail pharmacists would prepare Syrup of Hydriodic Acid freshly when needed, or at least at frequent intervals, the problem would practically disappear. Even some of the manufacturers are of the opinion (5) that Syrup of Hydriodic Acid is one of the preparations that should be made in the drug store. By keeping Diluted Hydriodic Acid (which is very stable) in stock, the pharmacist could mix this with sucrose and water whenever the syrup was needed. By so doing, the phar-

macist would avoid loss by spoilage and would have the satisfaction of dispensing a first-class product. If it is too much trouble for the pharmacist to weigh out the sugar, then perhaps the U. S. P. should return to the U. S. P. IX formula, which involved no weighing, but only the mixing of measured amounts of diluted hydriodic acid, syrup and water. In fact this change has already been suggested for inclusion in the U. S. P. XI by a Committee of the Philadelphia College of Pharmacy and Science (7) and it is the method used in the British Pharmacopœia.

The retail pharmacist need not use the cumbersome and time-consuming U. S. P. method for preparing Diluted Hydriodic Acid, which may be purchased as such. The U. S. P. is the only pharmacopœia of the world which contains a method for the preparation of hydriodic acid. I am of the opinion that the method has outlived its usefulness and should now be deleted from the U. S. P. The reasons for this opinion are as follows. When hydriodic acid was introduced into medicine, in the days when pharmaceutical factories were unknown, it was necessary that such products be made by the individual pharmacist. At the present time, however, pure hydriodic acid of 45% strength is a recognized article of commerce. Usually the 45% acid is stabilized by the use of 1.5% of hypophosphorous acid. When thus stabilized the acid will remain colorless for years. However, the stabilizer is quite necessary; in the acid of one manufacturer, no stabilizer was used and on examining the product I found it consisted chiefly of free iodine. At present prices, the 45% acid is relatively cheaper than the official 10% product, and it would therefore be practical for the pharmacist to purchase the 45% acid and dilute it to 10%.

In view of the availability of pure, concentrated hydriodic acid, there is no reason why the pharmacist should prepare this acid in small quantities, any more than he would prepare hydrochloric acid. In order to put this matter on a sound basis, it would be advisable to include standards for hydriodic acid of 45% strength in the U. S. P. XI, just as is done in the case of hydrochloric acid of 31% to 33% strength. In setting the standards, it would be best to adjust the percentage of hypophosphorous acid so that when diluted with the proper amount of water, the resulting product would correspond exactly to the present U. S. P. Diluted Hydriodic Acid, with respect to both hydriodic and hypophosphorous acids.

My calculations show that the concentrated hydriodic acid (45%) should contain 3.15% of hypophosphorous acid. The formula for Diluted Hydriodic Acid would be as follows:

Hydriodic acid (45%)	163 cc.
Distilled water q. s.	1000 cc.

For this calculation the sp. gr. of Diluted Hydriodic Acid was taken as 1.100 as given in the U. S. P. However, the U. S. P. value for sp. gr. is based on the product containing some potassium bitartrate (8) and thus the sp. gr. of the more pure acid would be lower and a slight correction in the formula for the diluted acid would be in order when the requisite data becomes available.

Replacing the diluted acid in the U. S. P. X formula by the 45% acid, the formula for Syrup of Hydriodic Acid would be as follows:

Hydriodic acid (45%)	21.2 cc.
Sucrose	450.0 Gm.
Distilled water q. s.	1000.0 cc.

Using syrup in place of sucrose, the following alternative formulas result.

Formula 1.

Diluted hydriodic acid	130 cc.
Syrup	530 cc.
Distilled water q. s.	1000 cc.

Formula 2.

Hydriodic acid (45%)	21.2 cc.
Syrup	530.0 cc.
Distilled water q. s.	1000.0 cc.

By use of these formulas, a first-class product may be quickly prepared and the entire procedure is economically sound.

SUMMARY.

1. Since pure, concentrated hydriodic acid is commercially available in a stabilized form, it is scarcely advisable for the pharmacist to prepare this acid.

2. It is suggested that the process for the preparation of Diluted Hydriodic Acid be deleted from the U. S. P.

3. It is suggested that the U. S. P. XI adopt standards for a concentrated hydriodic acid containing 45% of hydriodic acid and 3.15% of hypophosphorous acid. The present official Diluted Hydriodic Acid would be made by diluting the 45% acid with water.

4. Syrup of Hydriodic Acid should be freshly prepared by the retail pharmacist as needed or at frequent intervals.

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PURIFICATION OF DYNAMITE AND SAPONIFICATION GRADE GLYCERINS.*

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The purification of glycerin obtained from fatty sources has always involved an expensive distillation process. Thus a single distillation of saponification grade glycerin yields the so-called dynamite glycerin and a redistillation of this dynamite glycerin finally yields a "chemically pure" or "double distilled" glycerin. During

* Scientific Section, A. PH. A., Baltimore meeting, 1931.

the course of an investigation of the possibility of using other methods for the purification of dynamite and saponification glycerins, a new process was developed, involving a liming operation similar to that used in the sugar industry. The glycerin produced by this process is not of U. S. P. grade, but it is white and almost odorless and should find applications in several industrial fields. It is also superior to the refined white glycerin obtained by charcoal treatment of dynamite and saponification glycerin.

The purification of a good grade of saponification glycerin is carried out as follows:

The saponification glycerin is diluted with water to a hydrometer, reading of 16° Bé., and pure lime corresponding to about 5% of the glycerol present is added. The mixture is stirred at room temperature for half an hour, and then the temperature is raised to 80° C. and maintained at that temperature for half an hour while the stirring is continued. Carbonation with CO_2 is then started and continued at approximately 70° C. with constant stirring. The carbonation is considered complete when the mixture has become neutral to litmus paper.

The calcium carbonate and impurities are filtered off while the glycerin is still hot, and the filtered glycerin is again diluted to 16° Bé. with water. Heating is resumed and at 95° C., powdered charcoal equivalent to 3% of the glycerol present is added. A mixture of bone black and Nuchar is suitable for this operation. After stirring for about one hour, the hot mixture is filtered; a water-white glycerin containing about 60% glycerol is obtained.

This glycerin may be used for some purposes without any further concentration.

If a concentrated glycerin is desired, it is best obtained by vacuum distillation of the water, with or without steam blowing. The temperature of the glycerin thus treated must not be allowed to rise above 135° C., however, if the color of the finished product is to be kept as nearly water white as possible.

An additional treatment of the concentrated glycerin with 2% Nuchar for half an hour at 70° C. finally yields a white and nearly odorless glycerin of excellent taste.

Though tests on this finished glycerin show that it does not come within U. S. P. limits, it is an exceptionally good grade of refined industrial glycerin.

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THE ACTION OF SOLUBLE IODIDES ON STRYCHNINE SULPHATE.

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This investigation was brought about by the conflicting opinions in the literature found by the writer when gathering material for a course in incompatibilities in prescriptions.

The precipitation of strychnine and its salts by alkali iodides has been denied by some investigators and upheld by others. Furthermore, the precipitation has been said to be due to various causes, namely, alkalinity of the iodide, salting out of the strychnine salt, formation of the hydriodide and formation of a complex iodide.

Ruddiman (1) states that in some cases the precipitation is due to the alkalinity of the iodide. This view was also held by Campbell (2) and England (3).

Simon (4) added solutions of sodium chloride, bromide and iodide to solutions of salts of strychnine and obtained precipitates varying in degree in the order of the reagents named. He attributed the precipitation to the diminution of the solubility of the strychnine salts by the presence of the soluble inorganic salts.

The United States Dispensatory (5) states that strychnine should not be dispensed in liquid form with iodides for fear of forming the insoluble strychnine hydriodide.

The National Dispensatory (6) lists strychnine hydriodide as a salt sparingly soluble in cold water and dissolving more freely in alcohol. A method of preparation given is precipitation of the solution of strychnine salt by a solution of potassium iodide and recrystallization from alcohol.

Strychnine hydriodide is listed by Henry (7) and Allen (8) as sparingly soluble in water. It is not listed by any of the other later standard reference works such as the National Standard Dispensatory (9), Hager's "Handbuch" (10) and the United States Dispensatory (5).

The purpose of this investigation was to determine some of the conditions under which strychnine sulphate is precipitated by alkali iodides as well as the nature of the precipitation and the character of the precipitate formed.

EXPERIMENTAL.

A saturated solution of strychnine sulphate was treated with a 10% solution of potassium iodide, a white crystalline precipitate formed at once. An analogous reaction took place with sodium iodide.

It was thought that the precipitate formed might possibly be a double salt of strychnine sulphate and potassium iodide. The precipitate formed was washed thoroughly with distilled water, dried and tested qualitatively. A good test was obtained for strychnine and for iodine but the sulphate radical and potassium gave negative results. This indicated that the precipitate was strychnine hydriodide. It was recrystallized from diluted alcohol and the melting point taken. Above 275° it darkened and melted with decomposition above 280°. Because of the apparent decomposition that sets in at high temperatures it is impossible to obtain a definite melting point of the substance. The melting point varies according to the speed of heating of the bath, rapid heating giving a higher melting point with the same sample than slow heating.

A saturated solution of strychnine sulphate was treated with diluted hydriodic acid and a white crystalline precipitate was formed at once. It has the same appearance as the substance obtained with potassium iodide and showed the same behavior as to its melting point.

Analysis of Strychnine Hydriodide.

Sample 1.	0.500 Gm. required 10.45 cc. $N/10$ $AgNO_3$	= 26.52 per cent I
Sample 2.	0.500 Gm. required 10.5 cc. $N/10$ $AgNO_3$	= 26.64 per cent I
Sample 3.	0.500 Gm. required 10.4 cc. $N/10$ $AgNO_3$	= 26.39 per cent I
	$C_{21}H_{22}N_2O_2HI.H_2O$	26.50 per cent I

CONDITIONS OF PRECIPITATION.

Having determined the nature of the precipitation and the character of the precipitate a study was made of the conditions under which it takes place. In order to make the work of some practical significance, a dilution was chosen which would give an average dose of strychnine if it were prescribed in solution.

No.	Strychnine Sulphate.	KI.	H_2O q. s.
1	1 gr.	1.3	4 f℥
2	1 gr.	2.3	4 f℥
3	1 gr.	3.3	4 f℥
4	1 gr.	4.3	4 f℥
5	1 gr.	6.3	4 f℥
6	1 gr.	8.3	4 f℥
7	1 gr.	None	4 f℥

The above ingredients were compounded by dissolving the strychnine sulphate in half the water, adding the KI and then a sufficient quantity of distilled water to bring it up to the required volume. In Samples 1–6, inclusive, a white crystalline precipitate was formed a short time after mixing. This was identical with that formed with concentrated solutions of strychnine sulphate. There was no precipitation in the control even upon long standing. This series was repeated several times with the same results.

It was found that if the iodide were added to the strychnine salt in a smaller volume of water, a white crystalline precipitate was formed at once. This indicated that the controlling factor in this precipitation is the concentration of the strychnine salt. This was confirmed for when the quantity of strychnine sulphate was increased to two grains, a larger precipitate was formed at once with one dram of KI.

ESTIMATION OF THE SOLUBILITY OF STRYCHNINE HYDRIODIDE.

Rather than carrying out innumerable arbitrary concentrations, it was decided to estimate the solubility of the hydriodide in order to obtain an index as to the range of precipitation.

1. 100 cc. of saturated solution at 25° yielded 0.290 Gm. residue
2. 100 cc. of saturated solution at 25° yielded 0.285 Gm. residue
3. 100 cc. of saturated solution at 25° yielded 0.288 Gm. residue

Average 0.287 Gm residue

This would give a solubility of 1 Gm. in about 345 cc. of water at 25°.

This solubility would indicate that strychnine hydriodide would not precipitate in the concentration given by the reaction of KI on one grain of strychnine sulphate in four fluidounces of water. It was found that the above solubility is greatly decreased by presence of excess of the soluble iodide, for when one dram of KI was added to four fluidounces of the saturated solution there was an immediate precipitation of the hydriodide. The influence of the iodides as well as other soluble compounds on the solubility of strychnine hydriodide is to be studied further in this laboratory.

FORMATION OF AN IODINE ADDITION PRODUCT.

Unless freshly boiled distilled water was used in making up the solution of strychnine sulphate and potassium iodide, the solution became yellow on standing,

due to the liberation of iodine, and the white crystalline precipitate was gradually changed over to one consisting of brownish red needles.

This reaction was greatly accelerated when the solution was slightly acidified.

The precipitate was collected and recrystallized from alcohol in which it is only sparingly soluble. It melted at 252–254° with decomposition. When the melting point bath was slowly heated decomposition set in at a lower temperature and the melting point was lowered. The appearance and melting point indicated that the substance was the periodide $C_{21}H_{23}O_2N_2I_3$ which was prepared by Buracewski and Kozniewski (11) from a di-iodo derivative obtained by precipitating a hot alcoholic solution of strychnine with a concentrated solution of iodine in carbon disulphide.

This was confirmed by analysis.

1.000-Gm. sample required 41.6 cc. $N/10$ $AgNO_3$ = 52.78 per cent I
0.875-Gm. sample required 36.5 cc. $N/10$ $AgNO_3$ = 52.90 per cent I
$C_{21}H_{23}O_2N_2I_3$ equals 53.01 per cent I

Strychnine periodide is practically insoluble in water and only sparingly soluble in alcohol.

SUMMARY.

1. Strychnine hydriodide is formed when strychnine sulphate solutions are treated with alkali iodides or hydriodic acid.

2. One gram of strychnine hydriodide is soluble in about 345 cc. of water at 25°. This solubility is greatly decreased by the presence of excess soluble iodide.

3. Strychnine periodide is formed when a very dilute solution of iodine reacts on strychnine hydriodide. This substance has a low solubility in both water and alcohol and adds to the danger of prescribing strychnine in solution with iodides.

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THE EFFECT OF STORAGE OF DISTILLED WATER IN GLASS AMPULS ON THE ALKALINITY AND TOTAL SOLIDS CONTENT.*

BY A. O. MATTHEUS.[1]

The corrosion of glass by distilled water has been investigated on numerous occasions. P. Nicolardot (1), observing the action of cold and boiling water on various glasses, found that Jena glass lost 0.5–2 mg. when exposed to 300 cc. of boiling water for 3 hours and 0.5 mg. when exposed to water under ordinary temperatures for one week. Turner (2) found that various hard glasses behaved in like manner and that the losses in weight varied from 0.01 to 0.07 per cent. F. Mylius (3) subjected hard and soft apparatus glass to water treatments for 7 days at 18° C. and 3 hours at 80° C. He observed that water-resistant glasses liberated 0.000–0.004 mg. of Na_2O at 18° C. and 0.000–0.015 mg. at 80° C. Éwe (4) found flint glass to lose 0–4 mg. per 500 sq. cm. when exposed to boiling for 16 hours. Buhrer (5) and Kroeber (6) describe experiments in which precipitation of medicinal substances was caused by the liberation of alkali from the glass. These and other similar investigations bear out the fact that a definite amount of corrosion takes place when a glass surface is exposed to water at elevated temperatures for comparatively short periods and that these losses increase rapidly with temperatures above 80° C.

These losses, sustained by glass, can be looked at as impurity gains in the water and this viewpoint is of considerable interest when such waters are used for intravenous medication. Susceptibility to change in acidity, alkalinity, total solids, together with organic and bacterial contamination of water used for such purposes, is of prime importance. It is quite evident that glasses imparting an alkaline reaction to water would be objectionable as a diluent for alkaloidal solutions aside from the serious tendency of these same alkali-producing glasses to liberate platelets and splints when exposed to water for even short intervals of time.

The behavior of various glasses when exposed to aqueous solutions has necessitated the development of special tests as embodied in the reports of Buhrer (5), Kroeber (6), Mylius (3), Foerster (7), Turner (2) and others.

The solvent action of water on glass has been frequently reported in terms of alkali liberated. Experiments with Jena glass have shown that the increase in p_H value of the water has been very little and the solids liberated cannot be composed entirely of alkaline or even acidic substances. Kling and A. Lassieur (8), using a platinum still, prepared a distilled water having a p_H value of 5.8 and this water, on storage in platinum or Jena bottles either open to air or closed, was shown to undergo no change in p_H value. Williams (9), after storing distilled water in flint-glass bottles, noted a lowering of the p_H value from 6.8 to a minimum of 5.23. Experiments, about to be described, with water stored in Jena glass ampuls showed no marked increase in p_H value accompanying an increase in total solids from 1.5 to 6.3 mg.

The distilled water as freshly prepared, using a commercial metal still, possessed a p_H value of 6.2 and at no time was it possible to obtain a water which had the theoretical p_H value of 7. Attempts to prepare water having an index of 7.0,

* Scientific Section, A. PH. A., Miami meeting, 1931.

[1] From The Laboratories of Parke, Davis & Co., Detroit, Michigan.

using an all-glass distillation system, were not successful nor did distillation over sulphuric acid, phosphoric acid or alkaline permanganate yield any better results. Distilled water for research purposes has been prepared by several investigators but it was invariably of a p_H index lower than 7.

TABLE I.

Sample.	p_H.	Investigator.	Reference.
Single distilled	5.8	Kling and Lassieur	*Comp. rend.*, 181 (1925), 1062–1064.
Distilled	about 7.0	Dewitt and Brown	*Ind. Eng. Chem., Analytical Edition*, 1 (1929), 109.
Distilled	6.2	Fales	*J. A. Chem. Soc.*, 37 (1915), 2781.
Distilled over $KMnO_4$	5.8	Fales	*Ibid.*, 37 (1915), 2781.
Distilled	6.9	Dawson	*J. Phys. Chem.*, 29 (1925), 554.
Double distilled over H_2SO_4	6.4	Canals	*Bull. soc. chim. biol.*, 7 (1925), 673–677.
Double distilled	6.2–6.8	Carter	*Loc. cit.*
Double distilled	6.8	Williams and Sweet	*J. A. M. A.*, 78 (1922), 1024–1026.
Double distilled	7.0	Acree and Fawcett	*Ind. Eng. Chem., Analytical Edition*, 2 (1930), 82.

The factors that are responsible for the lower indexes listed are due to causes not definitely understood. Fales and Nelson (10), using the CO_2 content as a basis, calculated the p_H value to be 5.2–5.5 against 5.8–6.2 actual. Kling and Lassieur advanced the contention that the acidity is due to CO_2. However, using the process described by Dawson, it is relatively simple to obtain a water of p_H 6.9 by simply boiling, for a short time, distilled waters having a p_H value as low as 5.8–6.0. Acree and Fawcett (12), have demonstrated that the removal of CO_2 from water, employing aeration with CO_2 free air, produces a water of p_H 7.0, a fact which supports the view that the acidity is due to CO_2.

EXPERIMENTAL.

Preparation of Water.—Ordinary tap water was twice distilled, employing a tin-lined, aerated-type, industrial still. This freshly distilled water was collected in washed sterile pyrex bottles and immediately filled into 10-cc. washed Jena ampuls. A sterility test, made on a sample of the water collected just as it came from the still, showed the water to be sterile at this stage in its preparation. All U. S. P. specifications for distilled water were met. The ampuls were inspected for floating material and any that were found in this condition were discarded. The temperature of storage was not absolutely uniform but corresponded to that maintained in the laboratory room which varied from 22° C. in the winter to 27° C. in the summer. The sealed ampuls were sterilized for $^1/_2$ hour at 85° C. on each of 3 successive days.

Analysis of Water.—The ampuls, after storage, were scratched with a file at the constricted neck, and thoroughly washed with running distilled water. When dry, they were carefully opened and the contents removed with a syringe. Approximately 100 ampuls were used to supply the 1000-cc. sample used in the test for total solids.

The sample to be analyzed was evaporated from a three-inch platinum dish. The dish, heated to constant weight at 110–115° C., was allowed to cool in a calcium

chloride desiccator, a procedure which was followed identically in the final weighing. A two-inch sand bath, made from an ordinary jar cover and heated with a small electric hot plate, supplied the heating surface. A glass funnel lowered over the dish prevented contamination from extraneous dust particles. Boiling was avoided at all times in order to eliminate spattering. Loss of weight on ignition was determined by carefully heating over a free flame with subsequent heating at 110–115° C. for one hour.

Determination of p_H Value.—The p_H values were determined colorimetrically using an adjusted brom thymol blue indicator. Four hundredths gram (0.04) brom thymol blue was wetted with 5 cc. (95%) alcohol and 5 cc. water. To this 0.2–0.3 cc. of $N/10$ sodium hydroxide was gradually added and the solution well stirred until dissolved. This solution was made up to 100 cc., then adjusted to a p_H value of 6.9. To adjust the indicator to a p_H of 6.9, $N/10$ sodium hydroxide was added dropwise to the total indicator solution until the color produced when 0.05 cc. of the indicator added to 1 cc. of water, prepared by Dawson's (11) method, produced the same color as obtained when a similar amount of indicator was added to a 6.9 buffer. Dawson was able to prepare a water of a constant p_H value of 6.9 by evaporating $^1/_3$ of the volume of an ordinary distilled water sample, transferring the remaining water to a flask of a capacity sufficiently large to permit of completely filling and allowing the water to cool out of contact with air.

Condition of Ampuls after Aging.—The great majority of the ampuls after aging 18 months were perfectly clear. Whatever damages or corrosion resulted during the storage period, the dissolving away of soluble material did not liberate any splints or flakes so often noted as a sediment in bottles, similarly exposed. A random selection of ampuls, when carefully cut and microscopically examined on the inner surface, showed pitted, segregated areas. These areas appeared to be more plentiful on the water-aged glass; however, the difference, if any, was slight. The outlines of the pitted areas were quite irregular, the pitting was uniform over the area and this condition would account for the absence of whole segments of liberated material.

TABLE II.

	Start Oct. 8, 1929.	Jan. 8, 1930.	April 8, 1930.	Aug. 15, 1930.	April 1931.
Total solids per liter	0.0015 Gm.	0.0047 Gm.	0.0045 Gm.	0.0049 Gm.	0.0063 Gm.
Loss on ignition	None	0.0030	0.0025		0.0026
Inorganic solids	0.0015	0.0017	0.0020		0.0037
p_H value	6.2	....	....	6.6	6.4–7.0

Discussion of Results.—The total solids content of sterile distilled water, stored in Jena glass ampuls for 18 months, had increased from 1.5 to 6.3 mg. per liter. Of this amount 2.5–3.0 mg. was represented by organic matter which appeared at an early date and showed no increase. The origin of this organic matter is not definitely known, particularly when it is recalled that only glass surfaces were exposed to the water and that the conditions of handling which insured a sterile state at all times, eliminated any accumulation of bacterial débris. The inorganic portion of the total solids has been slowly increasing at an apparently constant rate as the aging progresses and has risen from 1.5 to 3.7 mg. per liter.

The p_H values of the water contained in the individual ampuls show a little variation due to differences in the glass. Over a short period not much difference is noted but after 18 months about 70 per cent of the ampuls show a p_H of 6.6; about 15 per cent, a p_H of 6.8; and 15 per cent, a p_H value of 7.0. This condition existing in the individual ampuls is in close agreement with the behavior of similar ampuls when heated with water at 100° C. for one hour, a test which was resorted to, to determine the uniformity of the glass. The initial p_H value of 6.2 has gradually increased to 6.6 with a small percentage as high as 7.0 but the average change was well within the limit of 6.2 to 6.6.

CONCLUSIONS.

The increase in alkalinity of distilled water was so slight that its use as a diluent would not be incompatible with any alkaloidal solutions. The contamination due to inorganic matter when pro-rated among the individual ampuls amounted to only 0.037 mg. per 10-cc. ampul. No glass splints or platelets were liberated. These data seem to indicate that the corrosion of the glass by distilled water at room temperature is a relatively slow reaction and no deleterious effects are produced which would be of any consequence in the use of water, so stored, for medicinal purposes.

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ESSENTIAL OIL EXTRACTION INDUSTRY IN THE NETHERLAND EAST INDIES.

The extraction of essential oils in the Netherland East Indies, as an industry, has been developed largely in connection with the processing of citronella, and the majority of estates having large areas planted to citronella operate steam-distilling apparatus to handle the output. They also frequently buy citronella grass from native plantings in their vicinity, but concentration of the extraction industry is impracticable since cintronella grass must be processed soon after it is harvested. Three or four distilleries handle such products as lemongrass, palmarosa, patchouli or vetivert, in addition to citronella.

There is also an extensive, but crudely developed, native extraction industry. All cajuput oil produced in Boeroe and Ceram, all of the cananga oil distilled in Bantam and most of the champaca, wintergreen, ambrette, clove and cinnamon oils, and similar products processed for local consumption are put through primitive native stills. According to the only statistics available there were in operation in 1927 under the Factory Safety Ordinance 151 essential oil factories —141 in Java and 10 in the Outer Possessions. (Trade Commissioner Don C. Bliss, Batavia.)

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SOLID CARBON DIOXIDE IN GERMANY.

The Leuna factory of the I. G. Farbenindustrie is reported to be planning quantity production of solid carbon dioxide. The product will be pressed into round discs and packed in insulated cardboard cartons. The present output of the Leuna plant averages from 1 to 2 metric tons daily. The Leuna plant has been manufacturing carbon dioxide for delivery to various parts of central Germany for industrial refrigeration purposes. (Consul Paul J. Reveley, Leipzig.)

DEPARTMENT OF BUSINESS MANAGEMENT

Conducted by Paul C. Olsen.*

COMMENTS, QUESTIONS AND SUGGESTIONS ARE INVITED AND WELCOME.

Readers are invited to submit comments, criticisms and suggestions regarding the material which appears in this department. The Editor will also undertake to answer questions regarding general problems of business management. Letters of general interest will be published, but the writer's name will not be revealed without his permission.

ADVERTISING AND SELLING PROBLEMS OF DRUG STORES.

Deciding How Much and What Stock to Carry.

BY PAUL C. OLSEN.

One of the most profitable drug stores in the United States has a merchandise stock constantly on hand which is valued at $35,000 to $40,000. This valuation of the merchandise stock is at the cost price. No one need have any doubt about the profitableness of this store when they know that, year after year, for the past ten years, sales from this investment of $35,000 to $40,000 in merchandise have produced net profits of upward of $35,000 a year.

On the other hand, one of the most unprofitable drug stores in the United States had an investment in its merchandise stock of less then $4000.

Stated in the simplest terms, the problem of deciding how much and what stock to carry in a drug store is as follows: The ideal situation is to have on hand in the store only those items of merchandise which customers will buy or can be persuaded to buy and to have these items on hand in just such quantities as will meet customers' demands for them.

It is an easy matter, as the sentence above shows, to set down just what the ideal stock of a drug store should be. But no experienced druggist needs to be told how difficult it is to keep close to that ideal day in and day out in the operation of a drug store.

The purpose of this article is to point out the tried and true plans which can be employed readily in the operation of a drug store to maintain its stocks at a level corresponding as closely as possible to the ideals set down above. This ideal is of the greatest practical importance. No profits possibly can be earned from the operation of a drug store unless merchandise is sold. Naturally no sales will be made unless they are of merchandise which customers want to buy or can be persuaded to buy.

Furthermore, the more quickly these customers buy this merchandise, the more quickly the opportunity for profits is presented. It doesn't follow necessarily that all sales of merchandise in a drug store can be made at a profit, but it certainly is true that no profits are made until sales are made. Similarly, the more quickly these sales are made, the more quickly profits are earned.

This is a simple statement of the general principle that a rapid turnover of the merchandise stock in a drug store is to be desired. Profit opportunities are lost,

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however, from too rapid a turnover of merchandise stock, just as they are not present when the rate of turnover of the merchandise stock is excessively slow.

When individual items in a merchandise stock are selling at so rapid a rate that they have to be reordered every day or two, it is obvious that in such a drug store there is danger of not having on hand at all times a sufficient quantity of such merchandise to meet demands which exist or can be created for that merchandise.

Such a failure is fatal to the success of a drug store. Customers reason that if the store does not have on hand this popular merchandise, its stock is decidedly incomplete; therefore the next time they need drug store merchandise they are apt to go to another drug store at which they are sure they can buy what they want to buy.

The loss of profits from a failure to have on hand merchandise which customers want to buy is not confined, as this makes plain, to that merchandise alone. Opportunities to profit from the sale of many dozens of other items to the same customer also may be lost. A drug store depends for its sales and consequent profit opportunities not upon one time sales to an ever-changing clientele, but rather to a long continued series of sales to a relatively small and definitely limited number of people.

From these facts the general conclusion arises that the minimum quantities in which staple, non-perishable merchandise should be bought are a month's anticipated sales of that merchandise, and the maximum, two months' anticipated sales.

Perishable and seasonable merchandise are obvious exceptions. In the case of perishable merchandise, the maximum quantity bought should not exceed anticipated sales for the period in which the merchandise can remain in the store in first-class condition. Similarly, merchandise which sells only at certain times of the year, should not be bought in quantities in excess of sales anticipated in its selling season.

In the preceding article in this series, it was shown that the usual amount spent by people in drug stores every day averages upward of ten cents per family. Thus the only drug store in a community of 500 families can anticipate daily sales of upward of $50. Similarly, two drug stores across the street from each other in a city neighborhood location which have 900 families more accessible to them than to any other drug stores can each anticipate daily sales of upward of $45.

These facts also can be used to make a definite estimate of the amount of money which profitably can be invested in merchandise in a drug store. Merchandise which is sold for ten cents should not cost more than 6.5 cents. Furthermore, it should be the aim in a capably managed drug store to sell all merchandise purchased within a maximum of two to four months from the date of its purchase.

Thus of an average family's purchases of $36.50 upward in a year, the amount actually invested in merchandise at any one time to make possible these sales to them in a year will be but one-third to one-sixth of the cost of this merchandise sold them in a year. (Ten cent daily purchases per family equal annual purchases per family of $36.50.)

As stated, the cost of the merchandise sold in a drug store should be not more than 65 per cent of its selling price. Sixty-five per cent of $36.50 is $23.72. The actual amount invested in merchandise at any one time is, as stated, one-third to one-sixth of that amount of $3.95 to $7.91—roughly $4.00 to $8.00 per family.

It is now possible to determine easily the minimum and maximum profitable limits of the total amount of a drug store's merchandise stock.

One example was cited earlier in this article of a drug store which obtained a business of upward of $50 a day in a community of 500 families in which it was the only drug store. Multiplying 500 by $4.00 and by $8.00 it is seen that such a drug store can expect to meet the needs of its community with a merchandise stock valued at the cost price of $2000 to $4000.

Stated simply, the formula: 4 to 8 times the number of families from which a drug store expects to obtain its business gives in dollars the amount of the investment which such a drug store should make in its merchandise stock.

If it is preferred to make a calculation of the amount necessary to invest in merchandise on the basis of anticipated sales, rather than on the number of families to be served, the formula is equally simple. Suppose anticipated sales are $30,000. Merchandise costs should not be more than 65 per cent of that amount, or $19,500. A third to a sixth of $19,500 is $3250 to $6500.

Many druggists with long years of successful experience in the operation of retail drug stores may question the calculations above as being entirely too low. They will cite instance after instance of drug stores in which the average investment in merchandise stock per family served is not $4.00 to $8.00 but two and even three times that amount. That is to say, in the case of drug stores with annual sales of $18,000, they will point to instance after instance of such stores having merchandise stocks not of $2000 to $4000, as the formula would indicate, but of $6000 to $8000.

There is only one explanation. Many thousands of druggists in all parts of the United States have been queried. With a unanimity which is startling, they have said that two-thirds to three-quarters of the merchandise they had on hand is so difficult or impossible to sell that no more of it will be ordered if ever present stocks can be gotten rid of.

Similarly, tabulations of sales of individual items of merchandise in other drug stores have been made and the same facts revealed. That is, facts show that a third to a quarter only of the merchandise stock in most drug stores is producing all or practically all of whatever profits are being earned.

Everyone knows that it is an impossibility to prevent some mistakes in buying; no one can anticipate all customers' demands perfectly. The only thing that can be done is to be on guard constantly to keep such mistakes at a minimum.

It is easy to see, for instance, that more sales and more profitable sales could be made in drug stores in the United States if two-thirds to three-quarters of the merchandise stock were composed of salable merchandise and the remaining third or quarter of unsalable merchandise. Now the situation is in so many instances, that two-thirds to three-quarters of the merchandise stock in many drug stores is composed of unsalable merchandise and the remaining third or quarter is all that can be sold readily or at all.

It is easy to see, that a correction of this condition would greatly reduce the total investment in merchandise stock, as well as increase the profits that could be earned. Then, too, the total investment in merchandise stock would be brought down to an amount which is more nearly in accordance with the formula above.

The reason why so large a proportion of the merchandise stock in many drug stores is composed of dead and extremely slow selling items arises from the falacious belief that large gross margins insure large net profits.

It is always of the greatest importance constantly to remember that no matter how large the gross margin that is obtained on a purchase of merchandise for resale, no net profits possibly can be realized unless the merchandise is sold.

Merchandise of unproved salability, no matter how great the gross margin offered, should be bought, if at all, only in minimum quantities, until it has proved its salability.

The question the buyer always should ask himself in considering the purchase of merchandise to sell to his customers is just this.

How much of this merchandise can I sell and how long will it take me to sell it?

If staple merchandise of proved salability should be bought in quantities not to exceed one to two months' anticipated sales, how important it is to purchase merchandise of unproved salability in more than minimum quantities until customers have shown their willingness to buy it.

The importance of turnover and volume in determining net profits earned from the sale of merchandise in a drug store will be considered in the next article of this series. Also in that article, will be a consideration of what can be done about cut prices and other drug store price problems.

RADIO MERCHANDISING.*

BY ROBERT WILLIAM RODMAN.[1]

Radio to-day offers the enterprising retailer one of the most exceptional opportunities in recent years to sell more merchandise.

The value of radio entertainment and advertising to the manufacturer who pays the bill is judged by whether or not such advertising sells more merchandise for him. The success of this new and unique advertising medium has been well established during the past few years and its popularity is shown in the ever-increasing number of manufacturers who are "on the air" regularly.

The question which should interest all druggists and particularly this section on commercial interests is "Who is getting this new business which is being stimulated by the radio programs of manufacturers of products sold through retail drug stores?"

We believe that the druggist should receive his share and have set out to show him not only that he can if he will tie-up with radio advertising, but also to show him just how to do it.

The most important method of radio tie-up is unquestionably by window and counter display. These should feature the fact that the products displayed are the ones which the customer or passerby heard about on the radio the evening before. While the interest of the public in a product has been aroused by the manufacturer's broadcasts, while they are "sold" on it by the sales message of the radio announcer, a display of the merchandise in the store window will crystalize their thoughts and "clinch" the sale. It is the final link in the chain. The druggist's lack of initiative in capitalizing on this factor will unquestionably furnish the department store or some other agency with profitable sales which otherwise might well have been his.

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* Section on Commercial Interests, A. PH. A., Miami meeting, 1931.

[1] Associate Editor—*The Druggists Circular*.

To demonstrate the value of radio merchandising to the neighborhood druggist, we established a test store at Lyndhurst, N. J., last April to try out the effect of radio window and counter displays in an average community.

The first test featured products advertised over the Columbia Broadcasting System, and included a face powder, a toothpaste, proprietary medicines, Kodaks and films, shaving cream, toiletries, cigars and cigarettes. All of this merchandise was sold at full price.

The display consisted of dummy cartons of merchandise, photographs of artists appearing on the several programs, a radio loud-speaker, and two dummy microphones, and a large sign—"Here are the products you hear about over the Columbia Broadcasting System." A record of the sales of these products was kept for the week preceding the installation of the display and this was compared with a similar record of sales during the week that the display was in the store.

The results were astounding. Not only was the sale of the products featured increased 141 per cent, but the total sales of the store were increased 15 per cent. The display aroused tremendous interest, brought new customers into the store, and all departments felt the stimulus.

The first test was so successful we decided to establish another—this one in a city neighborhood. For the city test we chose Gillbard's drug store in East Orange, N. J. The store is located on the main street of this city of 75,000 inhabitants. In this store we used two windows as well as counter display space and featured products advertised over the National Broadcasting network, including a toothpaste, an antiseptic, proprietary toilet items, shampoos and foot products. All of this merchandise was sold at full price over the cut-price competition of the local representatives of two national drug chains located in the same block.

The displays consisted for the most part of similar material to that used in the first test with the addition of some manufacturers' display material. The large sign in this display read "If you hear about it over the Radio you can buy it at Gillbard's." The result confirmed those of the first test as the sales of every product featured were increased from 5 to 50 per cent. Although the percentage increases in sales of the second test may not appear to be as impressive, on their face, as those of the small town drug store, used in the first test, they represent a much greater increase in actual cash volume.

Where a small town store may report a 300 per cent increase by selling four tubes of a tooth paste, as compared to one tube the week before the test, the city store must sell four dozen to each dozen sold before the test to duplicate the former's percentage increase.

Both of the tests clearly demonstrate the increased business which can be secured through radio merchandising. All of the displays were simple in construction and could be duplicated by any druggist at a low cost.

Many companies are already starting to distribute display material featuring their radio programs. We receive countless inquiries daily from retail druggists expressing interest in our forward movement and asking where radio display material may be secured. We plan to make more tests under varying conditions, we have offered our services to manufacturers in the preparation of display material and are aiding retail druggists in securing and installing those displays in order to get the greatest possible value out of this new project.

Some of the most interesting programs on the air are those of manufacturers of products sold through retail drug stores. The enterprising druggist will make the hosts of radio fame, salesmen for his retail drug store.

Radio broadcasting is a new element in the social life of the public which brings outstanding entertainment into the private home at small cost. Radio advertising opens up a new medium for manufacturers through which they can reach millions of consumers and sell their product by word of mouth. Radio merchandising is a new field for the retail druggist which offers great returns if he will take advantage of its opportunities.

Broadcasting, Advertising and Merchandising are all in their comparative infancy—all have latent possibilities which are gradually being developed.

The report I have made to you is based on the results of less than six months' research.

Our first studies of this interesting and profitable subject have not only shown what can be done but have given us the perspective to plan further studies. Future work will undoubtedly develop additional methods of going after this valuable new business. The effectiveness of radio display under new and different conditions will shortly be studied and valuable compilations of data released.

A PROPOSED FORMULA FOR ZINC OXIDE OINTMENT.*

BY R. K. MILLER, H. G. DEKAY AND C. O. LEE.

INTRODUCTION.

The dispensary at Purdue University School of Pharmacy has the privilege of furnishing the Athletic Department of the University with a number of pharmaceuticals, including ointments, rubs, etc. About four years ago the trainer in charge of the athletes complained that the ointment of zinc oxide was so stiff and harsh in cold weather that the boys objected to it and refused to use it upon abrased areas. He asked if it could not be made a little softer. We replaced a part of the paraffin in the formula with liquid petrolatum and the preparation was acceptable to those concerned.

While we have not hesitated to supply a modified ointment of zinc oxide to our Athletic Department, we have continued to teach our students to make it according to the U. S. P. It is quite difficult to make an elegant ointment from the official formula. Few ointments give the average class in pharmacy as much trouble as the zinc oxide formula. We have tried all sorts of ways in technique in an effort to get a better product with the U. S. P. formula without any marked success.

During the past few months we have given some study and experimentation to the development of a more satisfactory ointment. It has been our purpose to do two things. *First*, to develop a more acceptable formula and, *second*, to simplify the method of making so that any pharmacist would always be able to

* Section on Practical Pharmacy and Dispensing, A. PH. A., Miami meeting, 1931.

get a good product with a minimum of effort and time. It is believed that these aims have been accomplished, in part, at least.

EXPERIMENTAL.

Several compound bases were made up consisting of 85% to 90% white petrolatum. The remainder was composed of anhydrous lanolin, paraffin and cetaceum. Table I gives the formulas that were tried.

TABLE I.—OINTMENT BASE FORMULAS.

	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.	No. 6.
Anhydrous lanolin	5%	5%	..	5%	5%	10%
Paraffin	5%	10%	10%	..	..	5%
Cetaceum	..	..	..	10%	5%	..
White petrolatum	90%	85%	90%	85%	90%	85%

The bases were made by carefully fusing the ingredients upon a water-bath. They were then stirred just enough to insure thorough mixing and set aside to congeal without further stirring. These bases were then used in preparing 20% zinc oxide ointments.

It is always a problem to incorporate any dry insoluble powder into a fatty base and have the ointment entirely free from grittiness to the sight and to the touch. The base lubricates the little granules or lumps so effectively that rather severe rubbing or grinding is very often necessary for great smoothness in the finished ointment. If the powder could be reduced to smoothness before being incorporated in the fatty base, then to complete the ointment would be a matter of thorough mixing. This idea was tried out in the manufacture of 20% zinc oxide ointments from each of the six bases represented in Table I. Three ointments

TABLE II.—20% ZINC OXIDE OINTMENTS.

Base.	Liquid used to form paste with ZnO.	Surface Blistering after Fifteen Days. At 33° C.	Surface Blistering after Fifteen Days. In lab.	Surface Separation after Fifteen Days. At 33° C.	Surface Separation after Fifteen Days. In lab.
*No. 1	Alcohol	** +	+	–	–
*No. 1	Water	+	+	–	–
*No. 1	Glycerin	** –	–	–	–
*No. 2	Alcohol	+	+	Slight	–
*No. 2	Water	+	+	–	–
*No. 2	Glycerin	–	–	Slight	–
*No. 3	Alcohol	+	+	Slight	–
*No. 3	Water	+	–	Slight	–
*No. 3	Glycerin	–	–	Slight	–
*No. 4	Alcohol	+	+	Marked	–
*No. 4	Water	+	+	Marked	–
*No. 4	Glycerin	–	–	Marked	–
*No. 5	Alcohol	+	+	+	–
*No. 5	Water	+	+	+	–
*No. 5	Glycerin	–	–	+	–
*No. 6	Alcohol	+	+	+	–
*No. 6	Water	+	+	+	–
*No. 6	Glycerin	Slight	–	+	–

* See Table I.

** *Plus* for present; *minus* for absent.

were prepared from each base, using alcohol, water and glycerin, respectively, as liquids with which to form pastes with the zinc oxide. It was found that about 12 Gm. of glycerin would make a very smooth paste with 20 Gm. of zinc oxide in a short time by using either a mortar or a slab. Such a paste mixed readily with the bases. Alcohol and water worked reasonably well, also, but there was reason to believe that their use would be objectionable for stock ointments. This assumption was verified by subjecting the ointments to standing in the laboratory and to an oven temperature of 33° C. for a period of two weeks. The results of the experiment are given in Table II.

It was observed that surface blistering appeared in those ointments where alcohol and water had been used. Only in one case did slight blistering appear in ointments containing glycerin. As to separation upon standing, none was observable at laboratory temperature. At the oven temperature there was slight oily separation in several of the formulas. There was nothing to indicate, however, that the use of alcohol, water or glycerin was in any way responsible for the separation observed.

As a result of these observations the following formula for ointment of zinc oxide is suggested; (See Table II Base No. 1 with glycerin.)

Anhydrous lanolin	34 Gm.
Paraffin	34 Gm.
White petrolatum	612 Gm.
Glycerin	120 Gm.
Zinc oxide	200 Gm.

The procedure for making this ointment is as follows: Melt the paraffin in a suitable dish upon a water-bath. To it add the petrolatum and lastly the lanolin. When all is melted, stir just enough to insure thorough mixing and set aside to congeal. Rub the zinc oxide to a smooth paste with the glycerin and mix it with the required amount of the base.

The paraffin in this formula may be replaced with white wax or cetaceum. However, our study has not been carried far enough to see any particular advantage in these substitutions. The consistency of the finished ointment may be changed to suit one's fancy by varying the proportionate amounts of paraffin and petrolatum.

It appears to us that a compound base such as we have suggested has a great deal in its favor. It is simple in composition and very easy to make. Its consistency and keeping qualities are good. In fact, there is no reason why it should not prove to be a good stock base for a number of ointments. Studies are now being made in our laboratories in this direction. Hydrogenated oils, as ointment bases, are also being studied.

THE USE OF GLYCERIN, WATER AND OTHER AGENTS.

The use of glycerin, for the purpose of getting the zinc oxide into a smooth paste, has been made in the manufacture of the ointment. Williams (1) in 1886 recommended that 4 ounces of glycerin for each 5 ounces of zinc oxide be rubbed into a paste before being incorporated in a base of benzoinated lard and white wax. In 1900 Burrows (2) suggested that the zinc oxide be rubbed into a paste with an equal amount of water before being incorporated in a base composed of white petrolatum 50 parts and wool fat 10 parts. Later, Magoffin (3) used enough

glycerin to make a smooth paste of the zinc oxide before incorporating it in the base. He said, "It's but a little thing but it saves a lot of vexatious labor, is done in a few moments and is eminently satisfactory." We certainly agree that it saves a lot of vexatious labor. Cruse (4) used equal amounts of glycerin and zinc oxide to get an ointment free from grittiness.

A number of workers have used various oils to rub the zinc oxide to a smooth paste previous to incorporating it in the base. They report varying degrees of success. Such use of oils, of course, is quite logical but we prefer glycerin for ointment of zinc oxide.

NEED FOR AN IMPROVED BASE FOR OXIDE OF ZINC OINTMENT.

The U. S. P. X formula for ointment of zinc oxide makes a product that is too harsh and stiff, especially in cool weather, and the U. S. P. IX formula is entirely too thin for warm weather. It certainly should be possible to work out a formula which would be quite free from these objections.

The change from benzoinated lard to petrolatum, as a base for this ointment was made with considerable opposition, yet all knew how impossible lard was except for extemporaneous use. In 1915, Jones (5), in a paper entitled, "A Needed Change in Ointment of Zinc Oxide," reported a study of this ointment. He said, "My conclusion is then, that just as long as we continue to use benzoinated lard for a base, we must continue to expect trouble from this ointment." In the discussion following the presentation of Jones' paper it was revealed that zinc oxide ointment, with a petrolatum base was a common product of pharmaceutical manufacturers and quite generally used in dispensaries. It seems that the discussion turned the tide in favor of a petrolatum base for this ointment.

It is to be regretted that the present official formula has been found to be so objectionable. Concerning it, Nitardy (6) says, "Ointment of zinc oxide seems to be entirely too stiff to be satisfactory for general use and it would seem desirable to change the paraffin content from 15% to about 5%." The ointment, as we have said, is not only too stiff but it is too troublesome to make.

THE QUESTION OF THERAPEUTICS.

The question of therapeutic value is sure to be raised in connection with a discussion of a change in type of base for any ointment. In an effort to be correct in the choice of the proper base for ointment of zinc oxide, Sollmann (7), in 1920, sent out a questionnaire to the American Dermatologists in which he asked for a statement of preference as to the base for this ointment. He says, "The concensus among the leading dermatologists is distinctly in favor of petrolatum as the basis of zinc oxide ointment as being equal to lard therapeutically and superior in consistency, keeping quality and absence of irritation." It was further suggested that lard could be used in extemporaneous ointments, if preferred.

In discussing this question, Gersterner (8) said, "In the case of zinc oxide ointment, however, the therapeutic value of the ointment depends upon the astringency of the powdered zinc oxide and not upon the nature of the base. Therefore, petrolatum would possess all of the advantages without any of the above mentioned disadvantages." Clark (9), in 1920, made a study of several compound formulas for zinc oxide ointment. Concerning the subject of therapeutics he said,

"For the purpose of this present paper, then, the writer considers the question of therapeutics as unimportant, since any ointment will be satisfactory if it has the desired keeping qualities and physical characteristics." As a result of his experimentation, Clark proposed the present official formula. We believe that it is far from a pharmaceutically ideal ointment and we have already stated our objections to it. At the time this formula was proposed Beringer (10) criticized it and stated that it was hard to get a smooth ointment with the amount of paraffin present.

We do not claim that our proposed formula for ointment of zinc oxide is ideal but we do believe it is an improvement over the past and present official formulas. We shall be glad to receive suggestions for further study and improvement.

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PURDUE UNIVERSITY, SCHOOL OF PHARMACY.

A NEW IODINE OINTMENT FOR ANTISEPTIC PURPOSES.*

BY CHARLES H. LAWALL AND LINWOOD F. TICE.

The U. S. P. ointment of iodine is an excellent counter-irritant but illogical as an antiseptic dressing.

A one per cent ointment was devised which has shown excellent results from the standpoints of both effectiveness and stability.

The ointment base selected was white petrolatum, this variety being almost entirely free from unsaturated hydrocarbons which of course would readily absorb iodine and consequently diminish its germicidal activity.

To use a fatty base for the purpose of furthering iodine absorption by the skin is striving for an end which according to most authorities is impossible and, even if it were possible, absorption of iodine would be undesirable in an antiseptic dressing; to get a systemic iodine effect following the use of an antiseptic preparation would be objectionable.

In preparing this antiseptic ointment, Dioxan was used. This is recently developed at the Mellon Institute, and is chemically a double ether, diethylene dioxide. This combination produces a stable mixture of iodine and petrolatum, an achievement which heretofore has been impossible as petrolatum alone will maintain the full iodine strength but a short time, as the element escapes by volatilization.

Dioxan is a remarkable solvent in that it is completely miscible with petrolatum and also completely miscible with water. Thus an ointment made by incorporating

* Section on Practical Pharmacy and Dispensing, A. PH. A., Miami meeting, 1931.

an iodine solution in Dioxan with petrolatum readily gives up its iodine to the aqueous secretion of a wound.

A one per cent ointment of iodine in petrolatum was tested bactericidally by the method of making a smear of the ointment on a plate inoculated with a culture of Staphylococcus aureus incubating for 48 hours and examining the area surrounding the ointment for evidence of the presence of bacterial colonies. The results were very striking in that the only location on the culture showing growth was in the outer edge of the dish.

The formula for preparing the ointment is as follows:

ANTISEPTIC IODINE OINTMENT.

Sol'n iodine in Dioxan 7%	14 cc.
Paraffin	10 Gm.
White petrolatum	76 Gm.
To make about	100 Gm.

The 7% solution of iodine in Dioxan is prepared by adding to 100 cc. of Dioxan in a flask 7.6 Gm. of powdered iodine, stoppering the flask and effecting solution by means of gentle heat using a water bath. Then ointment is prepared by fusing the paraffin and white petrolatum together in a casserole, cooling until the congealing point is almost reached and adding the Dioxan iodine solution at once and stirring until thoroughly incorporated.

Several different metals were studied concerning their adaptability for tubing for the satisfactory dispensing of the ointment but none were found which were not attacked by iodine in time. There remains but one way of dispensing the ointment which is in jars of the paraffin-lined lid type.

CONTRIBUTED BY THE IODINE SCHOLARSHIP OF THE PHILADELPHIA COLLEGE OF PHARMACY AND SCIENCE, UNDER THE DIRECTION OF THE IODINE FELLOWSHIP OF THE MELLON INSTITUTE.

FURTHER STUDIES IN FILTRATION.*

BY JOHN C. KRANTZ, JR., AND C. JELLEFF CARR.

INTRODUCTION.

In a previous communication (1) to THIS JOURNAL the authors studied the influence of various filter media on the hydrogen-ion concentration of aromatic elixir. Basic hydrated magnesium carbonate imparted an alkalinity to the elixir as shown by a p_H 9.2. Normal magnesium carbonate or magnesite was employed and found to be quite satisfactory as a filtering agent in the preparation of aromatic elixir, and it did not impart an alkalinity to the preparation.

With the establishing of definite turbidimetric measurements for pharmacopœial purposes and the application of the Baylis (2) turbidimeter for this work, the authors decided to investigate some of the theoretical ramifications of the problem.

* Section on Practical Pharmacy and Dispensing, A. PH. A., Miami meeting, 1931.

THEORETICAL CONSIDERATIONS.

Oil particles suspended in water were found by various investigators (3) to have a diameter of 10^{-5} to 10^{-3} cm. The oil particles were found by microscopic measurement to be within this range. Oil particles suspended in water carry a negative charge, the origin of the charge is still open to question. Possibly the most tenable explanation is the preferential absorption of the hydroxyl ions of water. Thus the coagulation of the suspension is, partially at least, associated with the neutralization of these negative charges. Hardy's (4) work on the coagulation of suspensoids by means of electrolytes would suggest this condition to obtain. Thus when the charges on the suspended particles are neutralized by ions of opposite charge, the potential difference between the suspended particles and the dispersion medium becomes zero and the stability reaches a minimum. Powis (5), studying the influence of electrolytes upon the coagulation of suspensions. of cylinder oil in water found that the greater the valence of the positive ion of the electrolyte the greater was its capacity to coagulate the oil particles. He found the coagulating power of the four chlorides to follow the valency rule, namely, $ThCl_4$, $AlCl_3$, $BaCl_2$ and KCl.

Our investigations of the filtration of aromatic elixir with various filtering media led us to the conclusion, that with this and similar pharmaceutical products, clarification through a filtering medium consists of—*first*, coagulation by neutralization of the charge on the oil particle by an oppositely charged ion and *second*, the absorption of the coagulated particles by an insoluble filtration medium exhibiting an enormous surface.

EXPERIMENTAL.

Aromatic elixir was prepared using the same quantities of various filtering agents. The resulting elixir was examined in the modified Baylis Turbidimeter and their turbidities determined.

The results are recorded in Table I.

TABLE I.

Filtering medium 3 Gm. per 100 cc.	Number filtrations.	Turbidity p. p. m.
Sodium chloride	5	3
Fuller's earth No. 200	2	4
Magnesite No. 60	2	2
Magnesite No. 100	4	3
Ppt. magnesium carbonate	1	1
Magnesium oxide	1	1
Magnesium chloride	4	0.5
Talc No. 100	2	2
Alum	2	0.5

The results indicate that of the commonly used filtering media precipitated magnesium carbonate is the most efficient. The solubility of talc is relatively negligible, therefore its usefulness as a filtering agent depends almost entirely upon its absorption capacity. Magnesite dissolves to the extent of 10 mgm. per 100 cc. and for this reason serves primarily as a coagulant. Precipitated magnesium carbonate is soluble to the extent of 40 mgm. per 100 cc. and on account of its bulky nature exhibits a tremendous surface. Hence this medium possesses

the two-fold advantages of the capacities of coagulation and absorption. The filtering efficiency of talc was found to be augmented by the addition of small quantities of electrolytes such as sodium chloride. The objection to precipitated magnesium carbonate is the alkalinity which it imparts. For practical purposes of filtration we have found magnesite admirably suited.

SUMMARY.

Studies of various filtering media seem to indicate that the efficiency of a filtering medium for preparations of the nature of aromatic elixir depends upon its exhibiting the capacity of coagulating the oil particles by ionic neutralization and absorption by virtue of its surface properties.

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BUREAU OF CHEMISTRY,
MARYLAND STATE DEPARTMENT OF HEALTH,
BALTIMORE.

FIVE YEARS OF STUDY ABOVE THE HIGH SCHOOL SHOULD BE THE MINIMUM OF PHARMACEUTICAL EDUCATION.*

BY FREDERICK J. WULLING.

At the Rapid City, South Dakota, session of the Section on Education and Legislation, A. PH. A., 1931 meeting, I presented a paper on the "Completion of the Junior College the Next Prerequisite." (Published in the JOURNAL OF THE A. PH. A., April 1930, Vol. XIX, No. 4.) In the paper I advocated the "two-and-three" plan; that is, the completion of the Junior College course of two years of purely academic work and three years of technical pharmaceutical work following. Two years have now elapsed. The paper brought some comment, mostly adverse, although the proposal received some favorable support. One correspondent wrote: "Because I always read what you write I went through your paper. You should write and propose more frequently as I need more entertainment." The same critic commented even more caustically when the three-year and again when the four-year courses were proposed, but the minimum four-year course is now established as the five-year course will in the natural course of events become the accepted minimum course duly. Another friend wrote: "Your proposal to make the completion of the two-year academic Junior College course a prerequisite to technical study in pharmacy, is only another evidence that you should be put into the charge of a strong committee of restraint. Now that nearly all medicinal preparations are made and packaged on the large scale under conditions and checks that make mistakes impossible, your claim that the practice of pharmacy is a responsible one is simply preposterous. No education is necessary to simply buy and sell." Notice the reflection on both the pharmacist and the merchant. This critic's claims fall

* Section on Education and Legislation, Miami meeting, 1931.

to the ground in the face of the fact that the recognized business schools require a two-year academic college preparation before admission to the study of business subjects. A heartening letter from another commentator reads: "You are perfectly right in insisting that pharmacy has every right, indeed is obliged, to place its standards upon a basis already established by other and 'no more responsible' professions. Proper education including the cultural and ethical qualities that go with it, point the only way out of our present situation and the only means for our rehabilitation and the return of our professional self respect You establish the five-year course and others who are hoping for it, will be better able to increase their requirements." Another writes: "Pharmacy is in all respects a division of medicine, the most important one, in fact, and should therefore be characterized by the same standards upon which our medical brethren insist."

Advancements have ever had to fight their way against too conservative or uninformed or prejudiced minds and that is well, because development won against such opposition must have merit. The four-year course is not the end of the development begun with the abolition of the old-time two-year course. It is only a milepost, and beyond it is another milepost and then another in accordance with the law of civilization and human progress. There is nothing in history to prove that lower standards are in the long run better than higher, and civilization itself is proof that higher and ever higher standards are the law for the increase and maintenance of the welfare and safety of mankind. The great mass of the people do not think in large enough terms to realize this fact, and must be pushed forward by the comparatively few who do.

Progress is mental first of all. There is the individual mind and the collective. Great thoughts and projects arise in the individual minds who think in the larger terms. It is pioneering work on the part of the few to get new thoughts, ideals, projects, into the consciousness and acceptance of the group or collective mind. The higher the average of the common sense of the mass mind and of the smaller collective or group minds, the easier is the work. The average is not nearly high enough, but it is advancing perceptibly and is gaining momentum in an intellectual sense, and I believe in a moral one as well, as evidenced by recent developments in practically all walks of life. The one great collective human mind concerns itself, or should, with matters common to all humanity. For matters not common to all humanity, there are divisions or group minds, collective or inclusive in their own spheres. Every social group has its own collective mind in this respect, including individual minds who are leading or educating the mass minds in matters common to the group. The various professions are examples of such groups of divisions of the collective mind. There are the group minds of medicine, pharmacy, dentistry, law, education, business, mines, engineering, architecture, art, etc. Each of these group minds thinks in its own terms principally: the medical group mind is different from the legal because it has medical and not legal things to think about, and vice versa. Each of these social groups has its own further subdivisions, and so, for example, medicine has smaller groups of specialists, each subgroup thinking in the terms of its subdivision, but in relation to the larger group. The pharmaceutical group mind has its subdivisions, some of which are: the educational (teachers and the colleges), the practitional (practising pharmacists), the regulative (the State Boards), the industrial (manufacturers), distributive (wholesalers), etc.

Each of these subgroups, like all such divisions, thinks in terms peculiar to itself and usually refuses to think, even remotely, or occasionally or partially in the terms of the other divisions. And here I put my finger on a weak spot to which I will revert at another time.

For purposes then of what I am attempting to convey, let me classify: (1) the one great collective human mind; (2) the group minds or divisions of the collective mind and (3) the individual minds. The individual minds are basic in their several aggregates to and constitute the group minds and through these, the entire collective mind. All initiative is taken by the advanced individual minds, and in matters relating to or affecting the groups is or is not advanced by the group minds. The individual minds cannot, of course, do certain things, nor can the group minds. For example: all the proposals for higher pharmaceutical educational standards were made by individuals, but these could not actualize them. However, through the agency of the pharmaceutical group mind, which functioned at first through the A. PH. A. and now operates also through other subgroups such as the American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy, the state associations, the various conferences, seminars, the Research Council, etc., most of the worthwhile and timely proposals made by individual minds have slowly become actualized. The individual minds propose; the group minds enact; that is, if they are convinced affirmatively. To bring about this conviction is the difficult work. Even the most worthy proposals meet at once such obstacles as self interest, prejudice, jealousy, indifference, ignorance, inability to think a matter out to its logical conclusion and other infirmities of individual minds. The struggle is among the individual minds. When these minds agree, or a majority of them, enactment by the group mind follows and the agreement becomes a guiding principle for all. The initial, basic, preparatory work is therefore with the individual minds. Work with the group mind follows. The enactments of the group minds relate to matters affecting only the respective groups. Group mind matters may be said to be of two kinds: (1) Those relating exclusively to the group and (2) those relating to other groups. Similarly, individual mind affairs are (1) those pertaining to the self exclusively, and (2) those having to do with other individual minds. Group mind matters relating to other group minds bring the group minds into contact and sometimes into conflict. In all such matters the group minds, or a majority of them, must agree before they can produce any advancement, just as the individual minds have to agree in matters relating them to other individual minds before group mind action can be expected. Group minds must meet other group minds for agreement upon matters common to them all. The sum total of these matters in common constitutes the affairs of the one great collective human mind.

For a clearer understanding of what I am trying to convey we can compare: (1) The individual minds with the minds of individual citizens and with the minds of individual pharmacists; (2) The group minds with the minds of the state legislatures and with the minds of organizations; (3) The collective mind with the mind of Congress—as yet unorganized pharmaceutically. There is therefore a universal mind relationship. From the closest to the remotest degree every individual mind is related to every other individual mind and its life and affairs; to every group mind and its life and affairs and to the great collective or mass mind. The collective pharmaceutical mind is as yet unorganized. Its organization into a federation

representing all subgroup minds is pharmacy's next important self-defensive measure. (I have frequently written about the need of a federation of all organized divisions of pharmacy. Reiteration is not needed here, but all interested are referred to my papers and addresses published on the subject.

Applying what has been said above, emphasis should be placed upon the need of directing and educating the individual pharmaceutical minds into channels of better thinking. Most individual minds are open to conviction and willing to be guided rightly by, shall I say, advanced individual minds? But the advanced minds are not sufficiently marshalled to do the needed work. As already stated, the individual minds must associate themselves into group and subgroup minds for purposes of enactment of agreements binding upon all thus associated. The various pharmaceutical organizations already represent in a respectable degree such association of individual minds, but the respective subgroup minds have not planned sufficiently procedures for the further education of the individual minds for still needed higher enactments. The AMERICAN PHARMACEUTICAL ASSOCIATION, the American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy are the organizations nearest to this needed planning and work, because they are so intimately related to education and education is most fundamental and basic as generally agreed. The work they have already accomplished bears out what I am saying and advocating, only they should go further and accelerate their paces. It would be proper for these group minds to launch a well-planned and definitely directed movement toward generally higher educational and practitional standards and ideals of the individual minds. They would not be alone in so doing, because the group minds of other professions have already preceded them as shown by their respective higher standards of education and personnel. What the plans and procedures should be I have not now the time to indicate fully even if I could; indeed the plans should be formulated by many minds, but they should include: (1) a study of the procedures already largely completed by other professions; (2) wise selection of recruits to pharmacy; (3) the education and correlation of the individual minds especially of students and other recruits specifically toward the realization and appreciation of the value, ethically and materially, of higher standards and (4) the placing of a watchful keeper at the door to pharmacy. My proposal to require the completion of the Junior College for entrance upon technical pharmaceutical study, though an important one, is only part of what a concerted plan should be. It is only another of the periodical suggestions made by an individual mind realizing the need of additional enactments, instead of the command of the organized pharmaceutical group mind presenting its mature conclusion after careful thought and investigation, but that is the way all advancements have been started in the past and may have to be continued for a while longer.

It may be that this Section is sufficiently informed and convinced in the matter to propose the "two-and-three plan." Such a proposal would bring the matter definitely to the attention and consideration of the pharmaceutical group mind and thus put it in line for some sort of disposal. The AMERICAN PHARMACEUTICAL ASSOCIATION, and this Section especially, would thus add to their many previous actions in the interest of better pharmacy.

INSPECTIONS.*

BY JOHN E. KRAMER.[1]

Every pharmacist is familiar with the State Board Inspector, either by experience or by reputation. This inspector, ever on the alert for violations of the law, is, without a doubt, rendering much that is good. He halts the tendency to leave drug stores in the hands of unqualified persons for long periods, and curbs the sale of below-standard pharmaceuticals.

Familiar, too, are the inspections of the Fire Marshal, the Department of Health and the Bureau of Weights and Measures; all helping to make each drug store a standard in each of the departments mentioned. But, did you ever go into a drug store and have some glaring error, or what you thought was an error, jump out and strike you between the eyes? Badly placed displays, unseasonable ads, evidence of carelessness or other things which made you want to step back and make the corrections yourself?

Not assuming a cynical, know-it-all attitude, or possessed with the idea that all we do is correct, it is no wonder that some druggists complain of this and that and everything else. A casual glance through their places of business suffices to tell the most unqualified observer what is wrong. Perhaps, in looking through the front door for customers, these men lost sight of the state of things inside the door. For that reason, the purpose of this paper is to suggest a new type of inspection—a general inspection, to include almost everything in the confines of pharmacy. This inspection is to be independent, of course, of those mentioned in the opening paragraphs, but many suggestions may be made along those lines. Plans may be formulated in the following manner. As pharmaceutical associations are the basis of all organized work in the drug field, the logical place to center the activities of such an inspection would be in these associations.

The organizations could employ the services of an expert in each of the various types of work that make the drug store, such as prescription work, merchandising, advertising, fountain, general business policies and store planning or appearances; the last would be the most important of all. The group could then make personal visits to the stores of association members, survey the situation close at hand and offer suggestions for the improvement of that individual case, with reasons and arguments for the suggested changes.

This service would be of an impersonal, yet personal type of work, if I make myself clear. There would be no resentment or hard feelings at any criticism, either constructive or destructive. The service would be a part of the benefits derived from association membership and could be made an annual visitation.

No doubt all the suggestions to be made by such a visitation committee are printed from time to time in the leading pharmaceutical journals, but the pharmacist never believes that the suggestion can apply to him. It must be for someone else. A personal visit would make him see that any suggestions made apply to his case, and he would put them into effect, much to his benefit.

The entire scheme crystallizes to a plan of specific criticisms, an exchange of thoughts between two or more parties interested in the same profession. There

* Section on Education and Legislation, A. PH. A., Miami meeting, 1931.

[1] Acting Registrar, Philadelphia College of Pharmacy and Science.

is no doubt that the visitors will learn new things, too, as well as the person being visited. If two men have a nickel each and they exchange nickels, each still has only a nickel; but, if two men each have an idea and they exchange ideas, then both men have two ideas.

City, state and national conventions have men as speakers who have fine ideas about pharmacy. This visitation plan would bring men with ideas to individual cases. We wonder if a scheme such as this would help brighten up a few of the cases we have seen, and add one more to the many benefits derived from pharmaceutical association membership.

THE HISTORY OF THE UNITED STATES DISPENSATORY.*

BY HORATIO C. WOOD, JR., M.D.

It is hard for us to-day to picture the conditions in the world of physic one hundred years ago. There was no legal standard, nor even accepted agreement, for the preparation of medicines; each apothecary made his tinctures according to the formula of his choice. Tincture of opium obtained from one store might be a very different thing from that of a neighboring pharmacy. A movement to correct this unfortunate confusion was started in 1820, when the first edition of the United States Pharmacopœia was published. This book having no legal authority, its usefulness depended entirely upon the unanimity with which its standards were accepted. It was not received, however, with any sign of exuberant popularity and the movement would probably have died with this first edition, had it not been for a Philadelphia physician, Thomas T. Hewson. Largely through his agitation a second convention was called in 1830, which he attended as a delegate of the Philadelphia College of Physicians, the other two representatives of this institution being George B. Wood and Franklin Bache.

Unfortunately dissatisfaction among the delegates from New England led to the issuance of a similar book of standards a few months after the appearance of the revised edition of the United States Pharmacopœia. It was obvious that unless some very active measures were adopted the hope of a nationally recognized standard for the materia medica was doomed to an indefinite deferment. In view of the weakness of the Federal Government of that period, any legislative support was a political impossibility.

Impressed by the importance of uniformity in drugs and recognizing that it could come only through the voluntary compliance of the two professions, Dr. Wood conceived the idea of writing a Treatise on Materia Medica, to be based on the new Pharmacopœia, for the avowed purpose of popularizing it.

We must remember that the pharmacopœias of that day did not contain any tests for identity or purity; there was no description of the crude drugs recognized, merely a list giving the botanical name of the plant and the part employed. Thus, under the title of *Belladonna*, the U. S. Pharmacopœia said, "The leaves of the *Atropa belladonna*," not another word. Remember also that many pharmacists—and even some physicians—were still collecting their own herbs. It was of vital importance that they should be able to recognize the plants when they saw them

* Section on Historical Pharmacy, Baltimore meeting, 1930.

growing and to be able to make some judgment of the quality of the drug from its appearance.

Dr. George B. Wood,[1] then a young man of 35 and holding the Chair of Materia Medica at the Phildelphia College of Pharmacy, invited Dr. Franklin Bache (then Professor of Chemistry at Franklin Institute) and Mr. Daniel B. Smith, who was Professor of Pharmacy at the Philadelphia College of Pharmacy, to a conference on October 28, 1830, with the idea of collaborating in the book he had in mind. They agreed to divide the work into three subjects; Dr. Bache was to be responsible for the mineral drugs, Dr. Wood the vegetable drugs and Mr. Smith the pharmaceutical manipulations. Before the work had been fairly started Mr. Smith felt himself unable to perform his share and Dr. Wood took over the pharmacy as well at the vegetable materia medica. What a comment on the qualifications of our forbears that a man who a few years later became professor of medicine in the largest medical school in the United States should feel himself competent to write a treatise on pharmacy!

Franklin Bache, the great grandson of Benjamin Franklin, born in Philadelphia in 1792, was a pupil of the famous Benjamin Rush, Surgeon General to Washington's Army, and had himself served in the War of 1812 and received his medical degree from the University of Pennsylvania, in 1814, while still in the national service. He became professor of chemistry in Franklin Institute in 1826, in the Philadelphia College of Pharmacy in 1831, and in Jefferson Medical School in 1841, holding the latter chair until his death.

The Dispensatory of the United States of America, the result of the labors of Doctors Wood and Bache, made its first appearance in 1833. The book was an immediate success, as Dr. Wood himself wrote—"Greatly beyond our expectations," and a year had scarcely elapsed before a second edition was necessitated. For thirty years these two physicians and pharmacists (for while neither had ever practiced pharmacy, we must concede that they were at least scientifically qualified members of that profession) continued collaborating and published 11 editions, of which a total of 79,000 copies were sold. This sale was a colossal figure when we remember that at no time during that period were there 30,000 physicians in the United States.

After Dr. Bache's death in 1864, Dr. Wood continued the work alone with some assistance from his friends, William Procter and Robert Bridges. In the year 1876 Dr. Wood, then a feeble old man of 79, who still felt a profound confidence in his own abilities, started the revision of the 14th edition. But neither past greatness of accomplishment, nor pride, nor will can supply the failing vitality of age. He struggled manfully and obstinately with his task until the pen fell from his trembling fingers, and then he humbled himself to the extent of asking his nephew, and successor in the Chair of Materia Medica at the University of Pennyslvania, Horatio C. Wood, to finish the task he had started. After the death of George B. Wood in 1879, his nephew decided to continue the work and invited Joseph P. Remington, at that time a well-known apothecary of Philadelphia, and Samuel P. Sadtler, professor of Chemistry at the Philadelphia College of Pharmacy, to share with him the editorial responsibility of the 15th edition. During the 24 years which this partnership endured, the fame of the book, already well known around the world,

[1] Biography of Geo. B. Wood to be contributed by Dr. Arno Viehoever.

increased until the book has become almost a byword as the ultimate authority in all questions concerning drugs. Not only is it known in the United States as the "Pharmacists' Bible" but it is turned to with confidence in England, in France, in Germany, in Japan, in South Africa and, in fact, wherever there is a scientific medicine.

In 1907 Dr. H. C. Wood, who had been in precarious health for two or three years, started on the revision of the 19th edition, but, like his uncle, was forced to relinquish his task when it was about half completed, and his son, Horatio C. Wood, Jr., was called in as medical editor. Fortunately conditions were somewhat different than at the time of George B. Wood's breakdown, for Remington and Sadtler were both still vigorous men with long experience in dispensatory work. This new combination of editors, however, was not fated to last many years. When the time came for the revision of the 20th edition, Professor Remington was Chairman of the Revision Committee of the United States Pharmacopœia, and with extraordinary conscientiousness insisted on sacrificing his material interests in favor of what he deemed his duty to his profession. Although the Pharmacopœia meant little to him financially, while the Dispensatory meant much, he refused to do anything toward the revision of the latter until he had finished his task as editor of the Pharmacopœia. As soon, however, as this duty was accomplished he started on the labor of the Dispensatory with a concentration of energy far beyond the ability of his system—exhausted largely by the last three years of devotion to the Pharmacopœia—to endure. He struggled valiantly against failing strength; even after he had taken to his bed in what proved to be his last illness, he continued to read proof from his bed. He did not live to see the fruit of his labor, dying while the book was going through the press.

Professor Sadtler was also in such poor health that he was unable to properly perform his duties as chemical editor and much of the chemistry in the 20th edition was written by Dr. Charles H. LaWall.

Leaders may die, but their cause still goes on. So from generation to generation has been handed down the task of revising the United States Dispensatory. In the ninety-seven years of its existence never has there been an edition but what there was someone trained by previous experience to carry on the work. After the passing of Remington and Sadtler, Professor LaWall and myself, with the assistance of Professor H. W. Youngken, published the twenty-first edition in 1926.

Human knowledge has expanded so much that it is no longer possible for any one mind to compass an entire field of even a single science. The day has gone when a man can be at once an authority on clinical medicine, on chemistry and on botany. Any history of the Dispensatory would be lacking that did not make reference to the men who have had from time to time tasks of more or less importance in connection with its revision. Men like Robert Bridges, William Procter, H. H. Rusby, Albert Lyons, Henry Kraemer, John T. Anderson and Ivor Griffith have been called to its service.

It may be of interest to note something of the growth of such a pharmacologic classic during one hundred years of life. The first edition of the United States Dispensatory covered 1073 single column pages, 4 x $7^1/_2$ inches; perhaps we can better measure its size in that unit, so beloved of the cross-word puzzler, known as the "Em." The first edition contained about 1,982,000 ems. The 12th edition, the

last one written by George B. Wood, covered 1800 pages and contained 4,488,000 ems. The maximum size was reached in 1918 with 1928 pages and 6,793,000 ems, more than three times as large as the first. The book had become so large as to be unwieldly to handle, and by vigorous pruning of excessive verbiage and omission of some material of more interest to the antiquarian than the scientist, the present editors succeeded in reducing the size of the 21st edition by about 100 pages.

Another interesting historical coincidence connected with the Dispensatory is the succession of publishers which has gone down in almost as straight a line as that of the editors. The first publisher was the firm of Grigg and Elliott; which firm was bought out in 1850 by J. B. Lippincott and Grambo. This firm was reorganized, in 1865, under the name of J. B. Lippincott and Company. For 80 years a member of the Lippincott family has been president of this company, the present one being Joseph W. Lippincott.

Perhaps some of my readers might be interested in knowing a little of the labor connected with the revision of a work of this character. It is interesting to note that during the first fifty years of its existence fifteen editions of the Dispensatory were published; during the second 47 years only six editions have been issued. This does not betoken any laziness on the part of the editors, but means that the work of revision has become so much greater that it is practically impossible to complete it in less than six or seven years. Almost as soon as one edition is off the press, begins the collecting of data for the next. When we consider that the book treats of ancient drugs which have been used in medicine for thousands of years and have historical importance, of newly discovered synthetics produced in the laboratories of Europe or America, of rare vegetables from Patagonia to Greenland; that it must take cognizance of changes in commercial conditions resulting from not only such great catacylsms as the World War, but local tribal differences in Africa or the South Sea Islands; it is obvious that a staff of 100 experts could not be personally familiar with all that is contained between the covers. Textbooks by acknowledged leaders in the various departments of pharmacy and medicine, while freely consulted, cannot have the newest information. The chief reliance must be placed upon the periodical literature. Journals on botany, chemistry, pharmacology, medicine and all the allied sciences published in France, Germany, Italy, England and America must be abstracted and classified. Even while the manuscript is being prepared the newer literature is being continually consulted. Not infrequently it happens that some new discovery made during the preparation of the manuscript necessitates the complete revision of a monograph which was thought to be finished.

The present editors feel a sense of pride in being links in the historical chain of such a classic. Who will take up the task when the days of our labors are ended we know not, but we believe that the work will, as in the past, still go on though the workers may fall by the wayside.

Oregon Ergot, by Ernest T. Stuhr.

The existence of ergot in Oregon is reported. Soil, conditions of growth, climatological statistics of the area, seasonal growth and time of maturity are all given. Preliminary tests carried out by the official cock's comb method indicated characteristic activity. Undoubtedly ergot would thrive in this section of the country if the proper precautions were heeded.

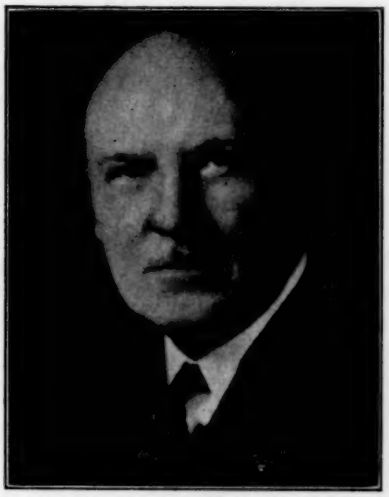
ADDRESS OF THE PRESIDENT OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.*

BY H. C. CHRISTENSEN.

We have gathered in this delightful Southern city to hold the seventy-ninth annual meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION.

I wish to take the very first opportunity to extend to the City of Miami greetings from our ASSOCIATION, and to compliment you upon the masterly fashion in which you have handled the arrangements for this meeting through your Local Committee, your officers, your state pharmaceutical association, your Chamber of Commerce and everyone that coöperated in the tremendous amount of work which such a large convention entails.

Truly, the traditional hospitality for which the South is noted was never better exemplified than in the preparation for this convention. From the moment the arrangements were started, the officers of the national body had the feeling that they were being taken into the hearts and the homes of this generous and hospitable city.



H. C. CHRISTENSEN.

There prevails a notion in the North that the South is becoming industrialized—we talk of the New South—and that the alleged Northern efficiency is becoming the dominant note in the South. There is no question as to there being efficiency, and to spare, but the delightful rôle of host has not been forgotten and is the dominant note with which the officers of the ASSOCIATION were impressed during the pre-convention arrangements.

On behalf of the AMERICAN PHARMACEUTICAL ASSOCIATION, and personally as its president, I wish to extend most sincere thanks to the City of Miami and its officials, the Chamber of Commerce, the Local Committee and the officers of the Florida Pharmaceutical Association, and last but not least, the pharmacists of the State of Florida, for their splendid coöperation in making this convention a possibility. This is the first convention the AMERICAN PHARMACEUTICAL ASSOCIATION has ever held in Florida, and I am sure that it will not be long before we shall be hoping for another invitation. Whatever success this meeting achieves will be due, in a great degree, to the tireless work of your local committee.

PROFESSIONAL PHARMACY.

For over three-quarters of a century, the AMERICAN PHARMACEUTICAL ASSOCIATION has been guiding the destinies of pharmacy in the United States and its dependencies. In all that time, there never has been a greater need for stressing the professional side of pharmacy than there is to-day. During the evolution of our

* Miami, Fla., July 29, 1931.

profession on this continent, it has passed through many phases. From almost purely professional work, it has passed—at times and in places—into almost purely a merchandising business. The retailer, in many cases through necessity, has developed into a dealer in toys, a purveyor of food, and vies with the tobacconist, usurps part of the clothier's business, competes with the confectioner, aids in the postal business, weighs you for a penny, rents you a book to read and conducts a free information bureau. So conspicuous have these activities become, that the retail pharmacist has crept into the cheap jokes of the press and stage.

Some contend that this situation will lead to two classes of pharmacies in the future, the so-called "drugless" drug store and the exclusive prescription pharmacy. The field for the latter type is strictly limited to large centers and particular locations, where the demand is sufficient to support such a venture. I disagree with those who contend that this separation into two types is necessary. The majority of stores throughout the length and breadth of this country are compelled to do a certain amount of merchandising in order to provide the community with the trained pharmaceutical service necessary in protection of the public health and welfare. But they should remember that they are pharmacists first, and merchandising should be secondary in place.

Pharmacy from its very beginning in this country has been dual in nature—the professional coupled with merchandising. But the dignity of the profession should be upheld. Pharmacy is the only excuse for the existence of the so-called drug store. With the drug sign down, how much merchandising can be done? If the atmosphere is that of a department store, how much prescription business will be attracted? The law gives to the pharmacist certain rights and privileges denied to others who do not have his qualifications and training. Why should he neglect these opportunities in favor of fields where competition is unlimited?

The problem confronting pharmacy to-day, therefore, is to discover the happy medium between the professional and the merchandising trends. The AMERICAN PHARMACEUTICAL ASSOCIATION is peculiarly fitted to lead the "Back to Pharmacy" crusade. The first step, perhaps, is to convince the pharmacists themselves of the opportunities they have been overlooking. Even a merchandising pharmacist can succeed better by stressing the professional aspect of his business. The second step is to counteract the loss of prestige with the public as a result of the era of overmerchandising. Only a thoroughgoing publicity campaign by an expert in public relations can accomplish this.

MEMBERSHIP.

The problem of maintaining and increasing membership is a vital one. In analyzing our present membership, I find that teachers in pharmacy, state board members, research workers, food and drug officials, hospital pharmacists, pharmacists in the Government service, pharmaceutical chemists and wholesalers are represented well up toward the 100% mark. And while there is a very noticeable increase in the membership of retail pharmacists, here is the logical field for further growth both from the standpoint of increasing the membership and from benefit to pharmacy. Here also is our point of contact with the public.

The AMERICAN PHARMACEUTICAL ASSOCIATION needs a larger membership among the retail pharmacists to successfully carry out its program for the proper

recognition and progress of pharmacy as a profession, and the pharmacist in turn, needs the prestige that membership in the ASSOCIATION will give him. As a member of the A. PH. A. we can talk *with* him rather than *at* him. The American Medical Association has been able to accomplish much for medicine simply because it has the active support of practically every physician in the country. If for no other reason, he belongs for the sake of the prestige his membership gives him. There is no reason why a similar condition cannot be created in pharmacy.

In my opinion, the era of predominant commercialism, based on copying chain store methods, is on the wane. For two consecutive years, I have attended a considerable number of state pharmaceutical association conventions, and am happy to report that there is a tremendous awakening of interest in the professional aspect of pharmacy. I believe, therefore, that this is the psychological time for us to embark on a membership campaign. With the college prerequisite requirement in force in most states, which means higher education and professional training for those entering pharmacy, we shall find the work of increasing membership easier as time goes on.

Experience has proven that membership cannot be built up to the point needed by volunteer effort. I agree with Dr. D. F. Jones, as expressed in his presidential address at the 1929 convention, and others, who have made similar recommendations, that direct personal contact must be made. I believe that a field secretary, to contact the better type of pharmacists personally and explain to them the activities of the AMERICAN PHARMACEUTICAL ASSOCIATION and the benefits to be derived from membership in that organization, is absolutely essential. I fully realize that such a venture will not be self-supporting for the first few years, but I believe that over a period of years, it could be made even more than self-supporting.

The activities of the AMERICAN PHARMACEUTICAL ASSOCIATION, including as they do every phase of pharmacy both professional and industrial, hold particular value for the retail pharmacist. The benefits to be derived by the retailer from membership are so apparent that the wonder is that any urge on the part of the ASSOCIATION is necessary. Frankly, I feel that the ASSOCIATION itself is largely to blame. It is simply a case of lack of salesmanship.

As so aptly pointed out by Dr. Jones, a full-time man contacting all types of the drug profession and drug industry—particularly the retail pharmacists of the country—would, I am sure, accomplish wonders both in the increase of membership and in promoting a feeling of fraternity and good will, and lead to a higher appreciation of pharmacy both in and outside of the profession.

I therefore recommend that this matter be taken up at the earliest possible time to develop a plan to include a full-time contact man.

In line with this thought, *I have one other definite recommendation to make:* The adoption of a membership certificate of suitable size and style for framing. To guard against the use of the certificate when the holder is no longer a member of the ASSOCIATION, it should be issued annually on payment of dues, and the year should be shown on its face in large, bold type. When such certificates are found hanging in the better class of pharmacies throughout the country, the public will be quick to grasp the idea that a pharmacist who is a member of the AMERICAN PHARMACEUTICAL ASSOCIATION is a professional man, safe to be entrusted with the compounding of prescriptions on which the life of a loved one may depend. The value back of

that certificate should be such that no pharmacist worthy of the name can afford to be without one, as in the case of physicians and the American Medical Association.

THE JOURNAL AND THE YEAR BOOK.

Under the very able editorship of Editor E. G. Eberle, the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION has achieved enviable scientific rank, and I wish to compliment Editor Eberle on the great and steady improvement of the JOURNAL under his capable management. The same applies to Editor DuMez of the YEAR BOOK and his predecessors. Any suggestions that I am making for changes in these publications, therefore, should not be considered as criticisms. No doubt the editors themselves have desired to make some of these changes but have felt unable to inaugurate them without the approval of the ASSOCIATION, as they represent a change in established policies.

My suggestions are simply these: That the JOURNAL be brought a little closer to the average retail pharmacist; and that it is desirable to bring the YEAR BOOK up to date. While these thoughts seem to be unrelated, they are really very closely connected in this instance and that is why I am considering the YEAR BOOK and the JOURNAL together.

There seems to be a general feeling that the YEAR BOOK loses much of its value by delay in publication. With the years of 1929 and 1930 unpublished and Editor DuMez giving only part-time service, we cannot hope to bring this work up to date soon. While scientific information a year or two old is still of value for reference purposes, it is of little service for readers who desire to keep in constant touch with scientific progress. Scientific abstracts are of considerable value primarily when they are new and up to date, and authors naturally choose the medium which will give early publication. As a result, chemical and other journals are carrying material which should rightly be classed as pharmaceutical.

I therefore believe that we should inaugurate a policy of publishing a YEAR BOOK quarterly as a separate section of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, or at least that the feasibility of this plan should be given careful consideration and study. These copies would, of course, be paper bound and at the end of the year could be permanently bound by the subscriber for his library, and the ASSOCIATION could keep available a supply of the quarterlies bound into annual volumes.

Another advantage is that more space would be available in the JOURNAL for articles of particular interest to the retail pharmacist.

I have already pointed out that our largest field for future growth of the ASSOCIATION is in retail pharmacy. This becomes our duty—to foster what remains of the professional in this era of commercialism, otherwise we shall lose everything. What we have in science, we must bring down to the ultimate plane—to retail pharmacy—if we are to survive.

I would be the first to oppose any abandonment of the highly professional and scientific policies of the JOURNAL. However, as the JOURNAL is our only contact with the membership, it must contain considerable copy of interest to the retailer if we are to gain and to hold his support. The entire structure of pharmacy falls if we take away the retail pharmacist. Therefore, in self-preservation, we must give him more consideration.

The Department of Paul C. Olsen is excellent. Also, much purely scientific information can be adapted for practical application in the retail pharmacy. In other words, we must convince our retailers that they can be professional pharmacists even though they find merchandising necessary. There are a considerable number of men in this audience who have made outstanding successes in professional retail pharmacy, and I am sure that they and others will be glad to write such articles from time to time for the JOURNAL. These will make intensely interesting reading.

Another suggestion I wish to make is that we devote more space to the state pharmaceutical associations. This would not only be an interesting and useful contribution to the literature of pharmacy but would make much valuable information available to a larger number of pharmacists and others. My visits to state association conventions during the past two years have convinced me that they are most willing to coöperate with the AMERICAN PHARMACEUTICAL ASSOCIATION, and we should therefore do everything in our power to encourage this trend by keeping in close touch with them.

The logical function of the ASSOCIATION is the publication of information on every phase of professional pharmacy, whether pertaining to the strictly scientific, the educational, the legal or enforcement phases, distribution or retail pharmacy. I therefore cannot approve of the policy of limiting the cost of publication of the JOURNAL and the YEAR BOOK to the revenue derived from the subscriptions therefor. I believe that everything that can be done to make our JOURNAL or our YEAR BOOK more useful should be done, even if it requires an investment over income to do so. Personally, I believe we could well invest several hundred dollars each year in attractive cuts for the JOURNAL, which the budget does not permit at present, and greatly increase its readability. I do no mean that we should copy after certain journals that are all cuts and no reading matter, but psychology tells us that few people have the patience in this age to read an unbroken type page unless they are urged to do so by an apt illustration. I do not advocate an extravagant publication policy or budget, but I do believe that the prime consideration at all times should be, not the cost of the publication, but the amount we can accomplish with our investment. In the long run, such a policy will prove economical.

PUBLIC RELATIONS.

No one denies that there is a crying need for more publicity of the right kind for pharmacy. We quite frequently receive attention in the cartoons and on the joke page, but that type of publicity should be suppressed instead of encouraged.

Henry Ford's theory early in his career was that the oftener a Ford car was mentioned, regardless of what was said about it, the more free publicity it received. Soon, however, he discovered that a large number of middle class people with buying power were selecting other cars, because they did not wish to be embarrassed by Ford jokes. How long has it been since you have seen a Ford joke in print? Mr. Ford decided that such publicity was undesirable and had it stopped.

The first question that comes up relative to publicity is financial. We cannot limit expenditures to $1000, the amount contributed to the Drug Trade Bureau of Public Information during the past year, and expect to get $25,000 worth of results. We usually reap returns on investments in direct ratio to the amount of money

invested, be it publicity or otherwise. Until pharmacy is ready to provide the budget for a trained public-relations man as other professions and trades are doing, we cannot expect to get the newspaper mention and other publicity they get. Only a man with newspaper training knows how to write the copy so that it will receive the editor's o.k. for publication.

Before going on, I want to comment on the splendid work which Director Fischelis of the Drug Trade Bureau has been doing with the limited funds at his command. With the hundreds of millions of dollars invested in the drug industry as a whole, it certainly is ridiculous that the budget for publicity totals only $1000 per year. All but four of the national associations have ceased supporting the Drug Trade Bureau of Public Information. A new ray of hope at present is that the state pharmaceutical associations are helping with small annual donations.

The director also has been hampered in his efforts because of the difficulty in getting news of public interest from pharmacy. Undoubtedly there is much available and these tips should be sent to him from time to time so that bulletins can be prepared for the press. The newspapers constantly strive to keep out news of a commercial nature, except such statistics as are of interest to readers of the financial pages. Our conventions and our meetings should be staged with some feature of public interest as a headliner. The physicians and the chemists have learned to do this well. As Dr. Fischelis says, "When pharmacy gets to the point where it will consistently and continuously do things that really are altruistic and of public interest, we will get all the newspaper space we need. As long as the desire of the members of our profession is to get the kind of publicity which will assist their business, we are more or less helpless."

A good example of this is the manner in which my talk on "The Need for the College Prerequisite" in Georgia was received. Not only did the newspapers feature this, but a splendid editorial appeared in one of the newspapers showing the disregard of public interest in the present standards and urging the legislature to take immediate steps to correct it.

The time for giving careful consideration to this whole problem of public relations is now, as we shall, doubtless, have much news of public interest breaking during the 1933 Chicago World's Fair and we should be in position to derive some benefit from it.

FOUR-YEAR PHARMACY COURSE.

The trite saying, "a river rises no higher than its source," is applicable—pharmacy will rise no higher than the men who feed the stream at its source. Although I am one of the older generation of pharmacists, I do not apologize for the men of my time. They fulfilled their mission in a creditable manner.

However, I am not so short-sighted as to overlook the fact that the graduates of the four-year course will make a higher grade of pharmacist than the man who graduated from the two-year course, with perhaps only two years of high school, to say nothing of the man who became licensed without any college training. Thus, as more of these better educated pharmacists slip into the stream of pharmacy, we can expect to reach a higher level in accomplishment.

There can be no question that the agreement between the National Association of Boards of Pharmacy, the American Association of Colleges of Pharmacy, and the

AMERICAN PHARMACEUTICAL ASSOCIATION to establish the four-year course in pharmacy in 1932 has been very helpful in securing a broader recognition of pharmacy as a profession. This is especially true in governmental and educational circles where the sciences and arts and professions are expected and required to give standard collegiate courses of an approved content and length.

If there are any who oppose the four-year college requirement in pharmacy, they overlook the fact that we are compelled to choose between being a trade or a profession. If we are a trade, then no educational requirement whatsoever is necessary. If we are to be rated as a profession, then we must enforce professional standards and have no right to advocate any standard below the collegiate course of four years.

As Dr. J. H. Beal has so aptly stated: "If the commercialists succeed in eliminating pharmacy entirely from the retail drug store, there will no longer be any means of placing any restriction upon those who desire to engage in the sale of drugs and medicines. In other words, the little bit of pharmacy which remains should be treated as a most precious possession. It is the basis of our franchise from the state when a license to practice pharmacy is granted." This is the factor which has been overlooked by those who desire to hold to lower standards, thus making pharmacy a trade. So long as we desire to hold to the rights of professional men, we must be willing to qualify by meeting the requisite standards for practicing a profession. The only reason pharmacy has been granted only half-professional recognition in the past is that we have been unwilling to meet the full professional prerequisites.

RESEARCH.

We may as well admit that up to the present, most of the research work on medicinal preparations has been done either by manufacturing firms or by or in the medical schools.

However, with the advent of the four-year course in pharmacy, we shall have better trained men in our own ranks. We shall discover some with a flair for research work, and we must develop within the field of pharmacy, per se, a corps of research workers. I realize that little research work can be done by the undergraduate, but wherever graduate work is being offered the colleges should make every effort to encourage research. There are many fields in which this could be carried on.

Let me take one single illustration, and that is the stability of drugs after they are manufactured either by the pharmacist or his source of supply. Is Tincture of Aconite as potent one year after manufacture as it was at the time it was made? Manufacturers are constantly working on some of their special products to develop such stability. But on the great bulk of medicines, chemicals and galenicals which a pharmacist dispenses, we have little authentic information as to the period of their effectiveness. Here is the opportunity for the colleges with graduate schools. If these institutions were to set up certain problems of this nature to be worked out during the year, publishing the results, I can foresee a wholesome rivalry and desirable competition growing up that will redound to the prestige of pharmacy. By building up such a corps of researchers, work of inestimable value to pharmacy will be accomplished and we shall enjoy a scientific atmosphere that will be priceless to our profession.

HEADQUARTERS BUILDING.

Every pharmacist in this country and everyone connected with pharmacy, whether subscribers to the building fund or not, is interested directly or indirectly in the completion of this project, to be known as the American Institute of Pharmacy. Pharmacists have looked forward eagerly to the day when pharmacy would have a home and an institution that would typify its aspirations and its service. A host of pharmacists have contributed of their time, their thought, their effort and their money to this cause, and have given a rare exhibition of real devotion to and interest in their calling. They believe that this institution will explain pharmacy and its value as a public health profession to our national and state governments and to the American public; that it will be the center around which can collect the history, the ethics, the literature, the education, the research of pharmacy; and that it will consolidate the influence and power of pharmacy for its protection, its improvement and its proper recognition.

It is undoubtedly the greatest movement that American pharmacy has undertaken for its own improvement and for the improvement of its service. It has been successful beyond our expectations, not only as to the amounts subscribed and collected, but notably in the higher standing it has given pharmacy even before the building has been begun. To have conceived such a project and to have put it into reality as far as has been done, establishes beyond question that pharmacy is virile, is progressive, is conscious of its responsibility and is ready to discharge its duties as a necessary public health profession and industry.

The reports of the Committee on the Headquarters Building and of the secretary will record the splendid progress made during the year toward the completion of the project. We have completed the purchase of the site, we have completed approved working plans and we have the cash on hand to erect the building and equip it according to actual estimates. We are prepared to begin building operations promptly. We are delayed by Government authorities on account of the failure to complete the plans for the development of the area in which our site is located. While this delay is interfering seriously with the work of the ASSOCIATION and with the advancement of Pharmacy, the developments planned for this section will enhance the value of our site beyond evaluation for the purposes we have in view.

PHARMACY WEEK.

Pharmacy Week has been the outstanding achievement of pharmacy in the field of public relations. In this organized effort, we have successfully carried the story of professional pharmacy to the retail pharmacist and then to the public. The recognition given to Pharmacy Week by the newspapers, the radio and men of prominence is the measure of its success.

The sudden death of the late Dr. Robert J. Ruth makes the future of Pharmacy Week very uncertain, as we realize that it was the personality of Dr. Ruth and his ability in this type of endeavor which has made Pharmacy Week such a success. We lament in his untimely death the loss of one who was loved by all who knew him. His radiant, enthusiastic personality will be greatly missed. The way Pharmacy Week was kept free from any tinge of commercialism is a monument to his memory.

I feel that no one can take his place, as he was the one man in pharmacy who grasped our problem of reaching the public and had the ability to dramatize our story so that it would have universal appeal. Our only hope, now that he is gone, is that the emergency will develop someone else to carry on this work by upholding the ideals set by "the father of Pharmacy Week."

U. S. P., N. F. AND RECIPE BOOK.

The movement in this country to reëstablish and emphasize professional pharmacy is reflected in the greater use of the U. S. Pharmacopœia and the National Formulary both by physicians and pharmacists. In the Chicago area, particularly, a definite drive is being made to induce physicians to prescribe the preparations of the U. S. P. and N. F., by drawing their attention to the fact that for every "proprietary" they prescribe, there is an equally good or better product in the Pharmacopœia or Formulary.

Physicians are beginning to realize that the hope of every manufacturer, even though he may profess to be vending exclusively through the medical profession, is that the time will arrive when customers will ask for these products by name over the counter. Every pharmacist in his contacts with physicians should show them that it is to the doctor's and patient's advantage to prescribe Pharmacopœia and Formulary products. In order to do this intelligently, the pharmacist must keep posted on the official preparations and their uses. Pharmacy's interest is primarily the welfare of the public.

The Recipe Book has already proven that it is of practical value to the retail pharmacist and a copy should be in every pharmacy in the country. The distribution on this new book is very satisfactory, considering the short time that it has been out. In years to come, I believe it will be one of the sources of income to the ASSOCIATION.

THE PHARMACEUTICAL SYLLABUS.

In view of the very thorough and fact-finding manner in which the present chairman of the Syllabus Committee is conducting his preliminary work, I can safely predict that the colleges will find the new Syllabus, when published, of great assistance in outlining their curricula. Chairman Beard and his committee are to be congratulated. With the advent of the four-year course, there is, of course, great need for a new Syllabus.

RECOGNITION OF PHARMACY BY THE GOVERNMENT.

The ASSOCIATION has continued its interest in securing a proper status for pharmacy and pharmacists in the several government services in which pharmacists are employed. Real progress has been made during the year and particularly in securing the interest of the officials who direct the medical departments of these services. A distinguished and experienced representative of the Medical Department of the Army will address us during this meeting.

Many questions are yet to be settled and much work is to be done. However, the need for improvement in the pharmaceutical conditions has been made so apparent that progress will undoubtedly be much more rapid than in the past. The AMERICAN PHARMACEUTICAL ASSOCIATION appreciates the support it has received from state and national pharmaceutical associations in this important work, which

will have a great effect toward securing that recognition for pharmacy which we believe it should enjoy.

PHARMACISTS ON BOARDS OF HEALTH.

The steady agitation that pharmacy has a right to be represented on state boards of health is beginning to bear fruit. Pharmacy is clearly a public health activity or service, and it is very encouraging to note that medicine and pharmacy are working together for the interest of the community.

During the year, Texas and Colorado added pharmacists to the membership of their boards of health by law. This gives pharmacy such representation in seven states in all, and the movement should be encouraged further.

PHARMACY IN HOSPITALS.

The pharmaceutical service in hospitals is still unsatisfactory and remains one of the most important pharmaceutical questions to be solved. I recognize that it will require careful consideration before definite requirements can be laid down governing this function of a hospital. However, I hope that before long a requirement governing the hospital pharmacy and the service it renders will be included among other requirements of an approved hospital—and will thus become effective in every section of the country. Pharmaceutical service in hospitals should be as carefully regulated and made as safe for their patients as is the pharmaceutical service in pharmacies.

The AMERICAN PHARMACEUTICAL ASSOCIATION is prepared to suggest standards of adequate pharmaceutical service, equipment and personnel to hospital organizations as referred to in Resolution No. 23 adopted at the 1930 annual meeting.

If this coöperation is not forthcoming from the hospitals, our only alternative is to amend the state pharmacy laws to require the constant attendance of a registered pharmacist in every hospital. With the modern restrictions of living space and the high cost of home care of the sick, more and more people are going to hospitals when ill. The use of hospitals by the sick has increased about 100% in the past fifteen years, and the matter of carefully safeguarding the pharmaceutical service is as important as in the retail pharmacy.

THE CHICAGO WORLD'S FAIR IN 1933.

The Pharmacy Committee of the Chicago World's Fair is actively at work, both as a whole and in small executive groups covering the various divisions of the work.

Actual construction of the Science Building or Temple of Health, in which the Pharmacy, Dentistry and Medical exhibits will be housed, has already started. Gen. Charles G. Dawes, on his recent trip to Chicago, completed a financial study of the Century of Progress (World's Fair) and reported that the financial success of the Fair is already assured, as $7,555,000 worth of bonds have already been subscribed. The total issue is $10,000,000, and the reserve bonds are being held to be disposed of later, if needed.

Dr. Eben J. Carey, of Milwaukee, has been engaged as Director in Chief of the medical group exhibit, including pharmacy, and is at present in Europe for two months of study and interviews on the problems of the Fair. Pharmacy has been

assured that it will be given all the space for scientific exhibits that can be profitably used.

INTERNATIONAL PHARMACEUTICAL FEDERATION.

More and more national boundary lines are being wiped out, particularly so far as science is concerned. Heart disease in Germany differs but little from similar ailments here, and digitalis acts on a Frenchman's heart in the same manner as it does on that of an American. By close contact, we benefit by the progress of other nations, and the advances in American pharmacy thereby become more effective and influential in foreign lands.

I understand that the Federation has been invited to meet in or near Chicago in 1933 during the World's Fair, and arrangements are being made for reduced transportation rates to enable more European delegates to attend the meeting.

SURVEYS.

While the AMERICAN PHARMACEUTICAL ASSOCIATION is more particularly concerned with promoting the professional side of pharmacy, we must not lose sight of the fact that retail pharmacy, the root and foundation of all pharmaceutical activities, also has its economic phases which require consideration. The ASSOCIATION is therefore well within the scope of its many useful activities in aiding in the survey of the drug business which is being conducted in St. Louis under the direction of the U. S. Department of Commerce and which will, no doubt, result in making available information of great value to retail pharmacy.

A number of other surveys are being carried on in coöperation with the Revision committees of the U. S. Pharmacopœia and the National Formulary, to determine the extent of prescription practice, and the drugs and preparations used in prescriptions so that those standards may fully serve their purposes to the professions of pharmacy and medicine.

More recently, W. Bruce Philip of California is conducting a survey with the object of correcting unfair and dishonest trade practices. Mr. Philip contends that there must be a legal, fair and honest way to correct the evils of unfair and dishonest merchandising conditions which have demoralized the drug business up to a danger point, both for the consuming public and the profession of pharmacy. The evils of predatory price cutting, unwarranted and misleading advertising, manufacturers' deals, quantity discounts, quantity buys and hidden demonstrators, are destroying the legitimate business of national advertisers.

He says, "It would be ridiculous, if it were not so tragic, that a mere handful of predatory price cutters, who care nothing for the sick, the retailer, the wholesaler or the manufacturer, can destroy fair and honest merchandising. There must be a legal and honest way to right these conditions, and I and those who are willing to aid me and are aiding me will find it. To that purpose, a survey of actual conditions has been made throughout California and one is being started by me to cover the whole United States. Facts are being accumulated and the drug world has started real thinking. One of the biggest successes so far in this survey is the bringing closer together of those of the profession and letting one another know what the other is doing or has done. It is made in the interest of the retail pharmacist and the public."

The joint survey of pharmaceutical education under the auspices of the American Council on Education has little progress to report, in view of the fact that it has not been possible to raise the balance of the budget required to make this study. The AMERICAN PHARMACEUTICAL ASSOCIATION, the National Association of Boards of Pharmacy and the American Association of Colleges of Pharmacy have pledged $45,000 for this purpose and it is hoped that assurance of sufficient money to undertake this project will be forthcoming soon.

The Committee on the Costs of Medical Care, on which pharmacy fortunately is represented, as it should be, is now in the fourth year of a five-year fact-finding study to determine the basic principles underlying the costs of medical care. This is not a governmental organization but is financed entirely by private funds supplied through such organizations as the Carnegie Corporation, the Rockefeller Foundation, the Russell Sage Foundation, the Milbank Memorial Fund, the Rosenwald Fund and other similar welfare agencies. The Committee is headed by Dr. Ray Lyman Wilbur, the Secretary of the Interior in President Hoover's Cabinet. Pharmacy will be greatly interested in the results of this study as soon as completed and published.

While the foregoing surveys are not direct activities of the ASSOCIATION, they are of interest inasmuch as they are for the welfare of pharmacy and the protection of the public.

THE SECRETARY'S OFFICE.

In my official capacity throughout the year, I have, of course been in close touch with the Secretary's Office and have been greatly impressed by the tremendous amount of work which he is called upon to do, and the very efficient manner in which it is dispatched. In addition to the correspondence and other office duties, he has been called upon to devote a great deal of time to the Headquarters Building and in interviewing Government officials in Washington on this and other matters. We are indeed fortunate to have such an enthusiastic secretary, so well fitted to perform this great variety of duties.

In closing, I want to express my appreciation to the secretary, the editor, the officers, the committees and the membership at large for the very whole-hearted manner in which they have supported me during my term of office. This spirit of coöperation has been invaluable to me in doing what I could to further the interests of the ASSOCIATION and pharmacy as a whole.

RESOLUTIONS AND RECOMMENDATIONS ADOPTED BY THE AMERICAN PHARMACEUTICAL ASSOCIATION AT ITS SEVENTY-NINTH ANNUAL MEETING AT MIAMI, FLA., JULY 27 TO AUGUST 1, 1931, UPON RECOMMENDATION OF THE HOUSE OF DELEGATES, THROUGH ITS COMMITTEE ON RESOLUTIONS.

PRESIDENT CHRISTENSEN'S ADDRESS.

The Committee on Resolutions wishes to compliment President Christensen upon his excellent address. It gives evidence of research and thought, and is expressive of the high ideals which have made him one of the most distinguished members of the pharmaceutical profession.

President Christensen recommended the adoption of a membership certificate of suitable size and style for framing. This recommendation is not approved as the committee does not believe it would be effective in serving the purpose for which it is proposed.

No. 1. Contact Man.

Resolved, that the appointment of a contact man of high character and integrity would be of great value to the ASSOCIATION and to pharmacy in increasing the membership of the ASSOCIATION and in promoting a feeling of fraternity and good will; that such a contact man would lead to a higher appreciation of pharmacy both in and outside the profession; that the Council is urged to give study to the appointment of a contact man whenever it considers it practical and feasible.

The president suggests that the JOURNAL be brought closer to the average retail pharmacist. This committee approves any and all efforts to make the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION most effective in advancing the interests of pharmacy. *The committee is of the opinion, however, that the present high standard of the Journal constitutes one of the outstanding distinctions of the Association and is one of its most priceless possessions.*

No. 2. The Journal.

Resolved, that the Committee on Publications be urged to study the relation of the JOURNAL OF THE ASSOCIATION to the membership of the ASSOCIATION and that changes be considered when they give promise of making the JOURNAL of greater usefulness and wider appeal; that the JOURNAL be regarded as the mouthpiece of Professional Pharmacy and this high purpose be considered by the Committee on Publications in any changes in editorial policy or typographical make-up which it may suggest or approve.

No. 3. The Year Book.

Resolved, that the Committee on YEAR BOOK be urged to study the feasibility of publishing the YEAR BOOK quarterly as a separate section of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION and that earnest efforts be made to issue the 1929–1930 volume as promptly as possible.

ADDRESS OF THE CHAIRMAN OF THE HOUSE OF DELEGATES.

The address of the Chairman of the House of Delegates contained two recommendations and they are embodied in the following two resolutions:

No. 4. Committee on Professional Relations.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION appoint a standing committee to be known as the Committee on Professional Relations and that the committee be authorized to make and maintain contacts with the other Public Health professions and the other groups or organizations having any relationship to Pharmacy or the Drug Industry.

No. 5. Council on Pharmaceutical Education.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION heartily coöperate in the establishment of the Council on Pharmaceutical Education and that the Council be urged to give diligent study to the development of pharmaceutical education along broadly constructive lines.

No. 6. Professional Pharmacy.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION continue to foster Professional Pharmacy and that the officers and members coöperate actively in "the back to Pharmacy" movement to the end that pharmacists may indeed practice their profession and make it still more effective as a force in public health.

No. 7. Pharmaceutical Research.

Resolved, that with the development of the four-year course in Pharmacy the Colleges of Pharmacy should still further encourage research in Pharmacy and that the Colleges of Pharmacy having graduate departments and facilities be urged to select research projects which bear some direct relationship to retail pharmacy.

No. 8. Publicity for U. S. P., N. F. and Recipe Book.

Resolved, that in furthering the interests of Professional Pharmacy, the AMERICAN PHARMACEUTICAL ASSOCIATION urges that more interest be taken in the official standards and that every dignified and legitimate means be used to acquaint the medical and allied professions with the great value and usefulness of the United States Pharmacopœia, the National Formulary and the Recipe Book.

No. 9. U. S. P. and N. F. Exhibits.

Resolved, that the State Pharmaceutical Associations be urged to assemble exhibits of U. S. P. and N. F. Products for display at the annual meetings of State pharmaceutical and medical associations, and that some agency be set up in the association to stimulate increased interest on the part of the medical profession in the use of products officially recognized.

No. 10. Professional Appearance of Pharmacists.

Resolved, that practicing pharmacists be urged to give serious study to the appearance of their stores and that the professional aspects be regarded of paramount and controlling importance.

No. 11. The Practice of Pharmacy a Personal Responsibility.

Resolved, that each State pharmaceutical association be urged to continue to inform the public that pharmaceutical practice involves high personal and professional qualifications and that it is a personal and individual responsibility, the assumption of which by large corporate or purely business interests is contrary to the public welfare.

No. 12. Pharmacy Week.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION continue to coöperate in securing a wide observance of Pharmacy Week in 1931; that it coöperate as actively as possible in plans for the continuation of this splendid means of directing public attention to the professional aspects of the drug store, to the end that Pharmacy Week may really accomplish the high purpose to which it was devoted under the enlightened direction of Dr. Robert J. Ruth, whose untimely death is profoundly lamented.

No. 13. Dr. Robert J. Ruth.

WHEREAS, Professional Pharmacy has suffered a loss by the untimely death of Dr. Robert J. Ruth that is felt throughout the entire pharmaceutical world, and

WHEREAS, one of the many brilliant inspirations that emanated from the active brain of this gifted and conscientious worker, was his suggestion that the professional phase of pharmaceutical practice be emphasized each year, and

WHEREAS, this constructive thought has been translated into the annual observance of Pharmacy Week, and

WHEREAS, the suggestion to observe Pharmacy Week was presented through the agency of the AMERICAN PHARMACEUTICAL ASSOCIATION at its annual meeting held in Buffalo, therefore be it

Resolved, that this ASSOCIATION record its keen appreciation of the unselfish efforts in behalf of Professional Pharmacy that were put forth by Dr. Robert J. Ruth during his life time,

That we record our overwhelming sorrow that his inspired work was cut short at the zenith of his career and

That a committee of five be appointed to devise appropriate methods for perpetuating the memory of Dr. Robert J. Ruth, and

That this resolution be spread upon the minutes of this meeting, and an engrossed copy thereof be sent to his family.

No. 14. Pharmaceutical Publicity.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION continue to give its active interest and support to the Drug Trade Bureau of Public Information and that it coöperate in any plan to secure the funds necessary to providing pharmacy with that degree of publicity in keeping with the value of its service to the public.

No. 15. Regulating the Display of Show Globes and Other Symbols.

Resolved, that the displaying of the show globes filled with colored liquids, of the mortar and pestle, and of the balances and weights by establishments not under the direct supervision of legally qualified pharmacists is deceptive and misleading and should be prohibited by law or by regulations of Boards of Pharmacy, when existing laws will permit the adoption of such regulations.

No. 16. Misleading References to Pharmacy in Press, Radio and Pictures.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION condemn in the strongest manner possible any reference to Pharmacy on the part of the press, radio, moving picture or theater which would reflect in any manner upon the integrity and good name of Pharmacy, and that the executive officers of this ASSOCIATION be instructed to voice our protest whenever and wherever such reflection becomes evident.

No. 17. Headquarters Building.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION continue in its effort to acquaint the retail pharmacists of the country with the full significance of the Headquarters building so that The American Institute of Pharmacy, which will so nobly record the place which pharmacy occupies in American life and development, may indeed be regarded as the headquarters of the pharmaceutical profession.

No. 18. Endowment for Headquarters.

Resolved, that the efforts put forth by the AMERICAN PHARMACEUTICAL ASSOCIATION to attain an adequate financial endowment for the Headquarters and its activities be continued, and that whenever possible the service of American Pharmacy to the public be brought to the attention of public spirited citizens and to the various foundations for the promotion of the public health and welfare.

No. 19. Pharmacists on Board of Health.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION continue to urge that Pharmacy be given a place in public health programs and movements and that the State Pharmaceutical Associations undertake active and aggressive means of placing a Pharmacist on the Board of Health in every state.

No. 20. Representation on the Advisory Health Council of the Public Health Service.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION as part of its work to secure adequate recognition for pharmacy, do all that it can to secure pharmaceutical representation and membership on the Advisory Health Council of the United States Public Health Service.

No. 21. The Pharmacy Corps.

The committee presents herewith the following:

(1) That the AMERICAN PHARMACEUTICAL ASSOCIATION renew its endorsement of measures looking toward the proper recognition of Pharmacy in the United States Army and toward improvements in the pharmaceutical service of that branch of our National Defense force.

(2) That a committee to assist in securing the necessary legislation be continued.

(3) That the AMERICAN PHARMACEUTICAL ASSOCIATION go on record as endorsing an officially recognized group of pharmacists as an integral part of the Medical Department of the United States Army.

(4) That the personal conferences between the Committee on the Pharmacy Corps and the Surgeon General's office be herewith approved and their continuance encouraged.

No. 22. History of State Pharmaceutical Associations.

Resolved, that all state pharmaceutical associations be requested to have prepared Historical accounts of their origin and activities and of the uses of drugs, and of the practice of pharmacy in their respective states and to furnish copies of the same for permanent preservation in the Archives of the AMERICAN PHARMACEUTICAL ASSOCIATION. Be it further

Resolved, that the State Pharmaceutical Associations be urged to continue the publication of their annual proceedings so that these most valuable historical records be preserved.

No. 23. The Capper-Kelly Bill.

Resolved, that the ASSOCIATION reiterate its approval and endorsement of the principles of Fair Trade and Honest Business Practice, that it again endorse the Capper-Kelly Fair Trade Bill and that its officers and members be urged to coöperate with the National Association of Retail Druggists and all other orgaizations interested in restoring retail distribution to a sound and wholesome economic basis.

No. 24. St. Louis Survey.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION again manifest its deep interest in the St. Louis Drug Store Survey and that the Department of Commerce be requested to collect as fully as possible information on the number of prescriptions filled in the drug stores of St. Louis.

No. 25. The Philip Survey.

Resolved, that the Conference of Pharmaceutical Association Secretaries endorse the high motive of W. Bruce Philip in this most important endeavor to bring through legal methods improved conditions of fair and honest merchandising to the retail pharmacists of all America, and that the AMERICAN PHARMACEUTICAL ASSOCIATION coöperate as fully as possible in bringing about a cessation of the unfair business practices which are the basis of the Philip survey.

No. 26. Importance of Prescription Records.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION again state its deep interest in developing Professional Pharmacy and that pharmacists be urged to institute adequate records for showing the total number of prescriptions filled, including refilled prescriptions so that the extent of this phase of professional practice might be available for statistical study.

No. 27. Ownership of Pharmacies.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION urge each State pharmaceutical association to favor legislation limiting the ownership of pharmacies to Registered Pharmacists to insure that the Practice of Pharmacy and Pharmaceutical service to the public shall be engaged in only by those who have by registration, demonstrated their ability and responsibility.

No. 28. Manufacture and Sale of Drugs and Medicines.

Resolved, that as the manufacture and sale of drugs and medicines are matters of direct relation to the Public Welfare, it is the conviction of the AMERICAN PHARMACEUTICAL ASSOCIATION that all questions dealing with the sale of drugs and medicines which contain poisonous, deleterious or habit-forming drugs should be placed by law under the control of the Boards of Pharmacy of the several states; that all State pharmaceutical associations be urged to secure such public health legislation as promptly as possible or practical.

No. 29. Student Branches.

Resolved, that the appreciation of the AMERICAN PHARMACEUTICAL ASSOCIATION be extended to the College of Pharmacy of the University of Pittsburgh, and the College of Pharmacy of the Washington State College and the University of South Dakota, for the fine work done at each institution in establishing student branches of the association and for having the branches represented at this meeting.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION request the colleges of pharmacy to give close study to the matter and that student branches be set up as rapidly as possible in all colleges of pharmacy.

No. 30. Endorsements of Conference of Pharmaceutical Association Secretaries and the Conference of Pharmaceutical Law Enforcement Officials.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION reaffirm its deep interest in the work of the State Pharmaceutical Associations and in the efforts of the law-enforcing bodies

and that it give its full support and coöperation to the Conference of Pharmaceutical Association Secretaries and to the Conference of Pharmaceutical Law Enforcement Officials.

No. 31. Exempt Narcotic Preparations.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION again direct attention to the unsatisfactory conditions existing in the sale of exempt Narcotic preparations by general dealers; that more supervision be given to records kept by general dealers, by government authorities; that studies be undertaken by State and Federal authorities whereby exempt narcotics may be considered as potent products and the sale of them be restricted to pharmacists so that the public interest might be more carefully served.

No. 32. Pharmaceutical Service in Hospitals.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION continue its efforts to require all hospitals to provide adequate pharmaceutical service under registered pharmacists and that it coöperate with all professional or public organizations to bring about so necessary a condition in the hospitals of the United States.

No. 33. Invitation to International Pharmaceutical Federation.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION extend a cordial invitation to the officers and members of the International Pharmaceutical Federation to hold a meeting of the Federation within the United States of America during the summer of 1933; said meeting to be held in connection with, or immediately preceding or following the annual meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION, and at or near the city of Chicago where there will be held an exhibition of International scope.

No. 34. Everglades National Park.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION goes on record in favor of the Everglades National Park project as outlined in the report of Secretary of the Interior, Hon. Ray Lyman Wilbur, to the 70th Congress, 2nd session, under date of December 3, 1930, in which Secretary Wilbur states that the "Everglades National Park project is one of outstanding merit and would measure up to established National Park standards and that this resolution be included in the minutes of this meeting, and also a copy of the resolution be forwarded to the Everglades National Park Association, Miami, Florida."

No. 35. Resolution of Thanks.

Resolved, that the AMERICAN PHARMACEUTICAL ASSOCIATION extend a vote of thanks and appreciation of the hospitality and courtesy of the pharmacists of Florida Pharmaceutical Association, the Dade County Pharmaceutical Association, the daily press of Miami, Chairman John K. Clemmer, of the Local Committee, Local Secretary, George H. Grommett, and their associates for the fine spirit of coöperation and assistance in making the Miami meeting enjoyable and successful.

THE NATIONAL CONFERENCE ON PHARMACEUTICAL RESEARCH.

The National Conference on Pharmaceutical Research held its tenth annual meeting at Miami, July 27th. The reporter of the various committees showed that the past year was especially fruitful in producing substantial pharmaceutical research, which has for its purpose the alleviation of human pain and suffering through the administration of drugs.

Of outstanding interest is the work reported on irradiated ergosterole as a substitute for vitamin D. The research on the glands of internal secretion was commented upon most favorably.

This year the conference published a popular symposium entitled "Fighting Disease with Drugs." This book was presented to the meeting of the association this year.

The officers elected this year were: Wm. J. Husa, Gainesville, *Vice-Chairman;* J. C. Krantz, Jr., Baltimore, *Secretary;* Fitzgerald Dunning, Baltimore, *Treasurer.*

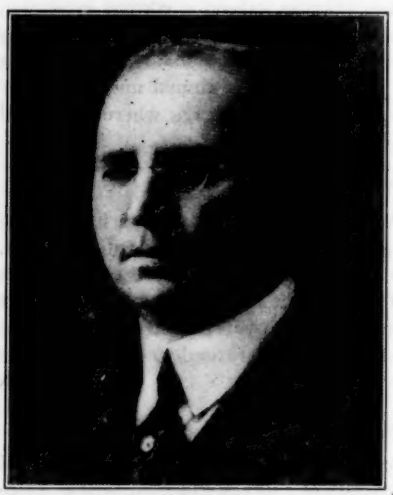
ADDRESS OF CHAIRMAN OF THE HOUSE OF DELEGATES.

BY C. B. JORDAN.

To the Members of the House of Delegates of the American Pharmaceutical Association:

For seventy-nine years the AMERICAN PHARMACEUTICAL ASSOCIATION has stood out as the greatest organization in American Pharmacy. It is the mother organization from which has sprung practically all other pharmacy organizations. It is the acknowledged leader in organized pharmacy and has been so acknowledged since its beginning. We are indeed proud that the A. PH. A. has been and is the acknowledged leader, but such a position of leadership carries with it grave responsibilities which must restrain our pride and cause us to seriously consider whether the ASSOCIATION has fully discharged the responsibilities which such leadership lays upon it.

The AMERICAN PHARMACEUTICAL ASSOCIATION must, whether it wishes to or not, accept in a great measure responsiblility for the good and the evil which exist in American pharmacy to-day. This is the compensation which we must pay for being the acknowledged leader. It would be well at this time to consider wherein we have been successful and wherein we have failed. If we can fully comprehend our successes and our failures, I believe we can gird ourselves for a better fight to secure for American pharmacy the things that we have thus far failed to secure.



C. B. JORDAN.

In reading the early history of this organization, I have been impressed with the things that were set forth as worthy of accomplishment by those who were interested in the first organization meeting. Briefly they are as follows: Fixing of standards for imported drugs; securing a law against the importation of adulterated drugs, chemicals and medicinal preparations; controlling the indiscriminate sale of poisons; control of secret and quack medicines; the organization of state and local pharmaceutical associations; the organization of schools of pharmacy; perfecting instruction to apprentices; careful selection of apprentices; etc. As we view this list of objects to be accomplished, we can look with a great deal of pride on the part the A. PH. A. has played in securing most of these. This is especially true as regards the control of the importation and sale of adulterated drugs, chemicals and medicinal preparations; in the building up and perfecting of the United States Pharmacopœia; and in the encouragement of the organization of colleges of pharmacy and state pharmaceutical associations.

It is not enough, however, for any organization to accomplish the purposes set forth at its beginning, because new and pressing problems are always arising and an active, energetic organization should be able to meet these emergencies successfully. As I judge pharmacy to-day, I think that our outstanding weaknesses are: Extreme

commercialism; lack of uniform educational requirements; the lack of coöperation between organized pharmacy and medicine; and the failure of recognition of the service of pharmacists in the U. S. Army. I believe we are justified in placing the responsibility for our slow progress in eliminating these four outstanding faults squarely on the shoulders of the leader, the AMERICAN PHARMACEUTICAL ASSOCIATION.

It is perhaps too much to expect of any organization that it will be able to control economic factors; especially economic factors that play such an important rôle in success or failure as they do in the case of the retail druggist. Perhaps no amount of effort on the part of the A. PH. A. could have prevented the extreme commercialism which we have to-day. However, higher qualifications for entrance to pharmacy, and higher ethical ideals on the part of those who enter the profession might, in a great measure, have prevented the modern drug store from becoming a place where everything may be purchased from sandwiches and mouse traps to automobile tires and electric accessories. Had our parent organization been sufficiently aggressive and awake to the trend of pharmacy, I believe much could have been done toward the control of this extreme commercialism.

The A. PH. A. should have taken a more aggressive part in raising the educational and ethical standards of pharmacists. It is true that in the past decade we have made tremendous strides in this direction, but most of the credit for these advances must go to the children of this organization, the N. A. B. P. and A. A. C. P., rather than to the parent organization. The responsibility of leadership is great and I fear that as far as development of pharmaceutical education is concerned the A. PH. A. has much to answer for.

The failure of the recognition of pharmacists in the U. S. Army and the lack of respect and coöperation on the part of organized medicine are in a great measure due to the lack of sufficiently high requirements for entrance to and practice of the profession. I believe we would have had no difficulty in securing a very close relationship with medicine and securing recognition for pharmacists in the Medical Corps of the Army had we in the past demanded of all who entered pharmacy a more thorough preparation, a preparation which would have removed the pharmacist out of the purely business class into the professional class, and had we been aggressive in pushing our cause.

The pioneers in this organization have accomplished much for which they deserve great credit and for which we can be justly proud, and I only speak of the failures for the purpose of emphasizing the active energetic part that we should now play in correcting the abuses that have crept into pharmacy. Such a progressive program is expected of the leader and it is the price we must pay for acknowledged leadership.

Premedical Education and Pharmacy Schools.—Every medical school requires from two to four years of premedical education. If four years are given to this, there is no better premedical training than the Four-Year Course in Pharmacy. Much of the required premedical education is in the sciences that are fundamental to pharmacy, and the small part of required work that is not fundamental can very well be classed as cultural, and therefore secured in a college of pharmacy. In other words, a premedical student can secure his pharmacy degree, be eligible for registration as a pharmacist and also complete his premedical work. Those

physicians who have secured their premedical training in colleges of pharmacy will, in my opinion, be better prepared and in addition will be friendly to pharmacy. Such physicians will be less likely to dispense their own medicines. Therefore, the use of the pharmacy course for premedical training will be beneficial to both pharmacy and medicine. The only "fly in the ointment" is the lack of recognition of pharmacy schools by the A. M. A. The Council on Medical Education of the American Medical Association does not recognize pharmacy colleges as such in their list of approved colleges in which premedical education may be secured. The Council may recognize a university or other educational institution which has a school or department of pharmacy; but in doing this, it is generally understood that the premedical work will be secured in the Liberal Arts College or the Science Department. Very few students to-day are securing their premedical training in a college of pharmacy.

Why is this true? Is not the work of our colleges of pharmacy up to standard? Do they not deserve recognition? Medicine has never considered pharmaceutical education up to the standard and medicine is not alone in holding this view. In September 1932, the American Association of Colleges of Pharmacy will require the four-year course as a minimum. When that point is reached, we should no longer be considered substandard by medicine or any other profession or group. An active, aggressive attitude on our part will be necessary to convince our medical friends that we are up to standard. That active, aggressive attitude can, with much better grace, be taken by the A. PH. A. than by the A. A. C. P. However, the A. PH. A. has not been aggressive nor progressive as far as pharmaceutical education is concerned and, at this late date, has no organization for the purpose of furthering pharmaceutical education. Therefore, I recommend that the AMERICAN PHARMACEUTICAL ASSOCIATION establish a standing committee to be known as the Committee on Pharmaceutical Education, and further that the ASSOCIATION instruct this Committee to assume an active, aggressive attitude toward the problems of pharmaceutical education.

A Pharmacy Corps in the Army.—The securing of a Pharmacy Corps in the Army has long been the dream of American Pharmacy but it is only within the past few years that an active, aggressive attitude toward the problem has been assumed. Better trained pharmacists would have made this problem easier of solution. The A. PH. A. has, however, assumed an aggressive attitude toward this problem and I am indeed glad that we have at last reached the ear of the Surgeon General of the Army. Most of the credit for this belongs to the A. PH. A. and I am more than pleased to acknowledge it. For years we have had a sufficient number of trained pharmacists to fill a corps in the Army, but as long as the rank and file of our graduates were completing courses of two and three years, we could not expect the Government to look with much favor upon such training as professional. The College Association requirement of a minimum four-year course in 1932 has materially assisted in securing such recognition as we have at present. We are, however, justified in expecting that the leader, the A. PH. A., shall continue to assume the same aggressive attitude toward this problem until it is solved.

There are other ways by which the A. PH. A. can assist pharmaceutical education. At present our proposed plan of a Study of Pharmacy is at a standstill because not sufficient funds are available for the work. It is true that the Council of

the A. PH. A. has signified its willingness to contribute an amount equal to that contributed by the N. A. B. P. and A. A. C. P., provided the remainder can be raised in some other way. Is it enough that the A. PH. A., the strongest national organization of pharmacy from the standpoint of influence in professional pharmacy and the acknowledged leader in our profession, should only contribute equally with its children, the N. A. B. P. and A. A. C. P.? I do not think that this is enough. If the available funds of the A. PH. A. were made more useful to present-day problems, the ASSOCIATION could, I believe, finance the Study of Pharmacy with such help as has been offered by the N. A. B. P. and A. A. C. P. Is not that project worth while? Since the A. PH. A. is the acknowledged leader, if it expects to deserve and maintain that leadership, it should contribute more funds for this Study which the N. A. B. P. started. In fact, the A. PH. A. should have been the originator of the movement. It seems to me that it can now redeem itself by contributing very liberally to this Study, thus permitting it to go forward. I can see several pressing problems for consideration by an active standing committee on Pharmaceutical Education and I hope the Association authorized such a committee.

In my opinion there are two well-defined movements in American pharmacy to-day that should have our consideration. I refer to the development of professional pharmacy and to the gradual reduction in dispensing by physicians.

From 45 per cent to 50 per cent of the strictly professional drug stores of the United States have been opened in the past six years. A study of the professional activity of the drug stores reveals that we have to-day between 350 and 400 stores that are receiving 50% or more of their total sales from their prescription departments. This is a tendency that the A. PH. A. should foster and encourage. I think the time has come for the organization of the professional pharmacists into Arny's Institute of Prescriptionists, Nelson's Trade Marked Prescription Stores, or some similar organization. Perhaps an organization within the A. PH. A. will suffice for present conditions. The problems of the professional pharmacist are quite different from those of the commercial pharmacist or even those of the average retail druggist. Since this is true, we can readily see how a separate organization or an organization within the A. PH. A. would be beneficial to them. Our Association should assist in the development of this important phase of pharmacy and the A. PH. A. should present its good offices for their service.

There will probably always be dispensing doctors, regardless of whether this is an ethically sound way of administering medical care. We can, however, detect a reduction in the number of dispensing physicians. The cause of this reduction may be surmised. The average young man leaving medical school to-day is not settling in the sparsely populated communities. He is interested in cities and the larger communities. Not so many doctors are willing to start to practice in towns of less than five or ten thousand. These young men naturally wish to be considered "up-to-date" in their medical practice and therefore, everything being equal, prefer to write prescriptions. The cost of a stock of drugs adds a burden that many of them are not ready to assume, after the heavy expense of a college course coupled with the cost of office and equipment. Therefore, I believe there are fewer of the young medical men going in for dispensing. Our ASSOCIATION should encourage this tendency and do all it can to see that every prescribing physician is provided with competent pharmaceutical service. The efforts that we are placing upon commer-

cial pharmacy could very well be taken over by the N. A. R. D., giving us more time for professional pharmacy. Our ASSOCIATION, through a good contact committee, could work with the American Medical Association and do much to bring about friendly relations and an understanding that will encourage prescribing and discourage dispensing by doctors. Such a contact committee could find many useful things to do, encourage closer contacts between state medical and pharmaceutical associations, friendly relationships with other pharmaceutical organizations, etc.

For many years the average physician supply house paid no attention to the retail pharmacist. They went merrily on their way dealing with dispensing physicians and totally ignoring pharmacy. I believe I detect a pronounced change in the attitude of many of these companies, and, if the pharmacists are willing to meet them half way, much of the business that has been done directly with the physician can be directed through the retail drug trade. No doubt these companies will continue to serve their old dispensing customers, but, I believe, that many of them can be induced not to open new accounts with physicians. They seem to be in a receptive mood and, regardless of the cause of this receptive attitude, pharmacy should be awake to its importance and cultivate it. I believe we can work in harmony with the American Pharmaceutical Manufacturers' Association and secure an understanding that will be mutually beneficial. Here again a good active contact committee could function well. I recommend that a standing contact committee be established and that this committee be instructed to serve in any capacity where contacts will be valuable to our ASSOCIATION. If such a committee is organized, funds for active operations should be provided it.

I have recommended the organization of two new standing committees fully cognizant of the fact that the ASSOCIATION already has a great number of standing committees. I am fearful, however, that many of these committees are truly "standing" committees and therefore not showing much progress. Our officers should put new life into them or, if that is impossible, change the membership and try it again. In saying this I am not unmindful of the fact that I am chairman of one of these "standing" committees. If the A. PH. A is to accomplish its aims and retain its title of leader, it must become more active, more awake to the needs of pharmacy, and it must take a more aggressive position on many questions. If the committees of the ASSOCIATION had always been as active and aggressive as has been our committee on Pharmacy Corps in the Army during the past two years, we could have no fear regarding our right to deserve and our ability to retain the title of leadership.

May I repeat that leadership carries with it grave responsibilities? May I also point out that the sins of "omission" are often quite as bad as those of "commission?" In discharging our responsibilities as leader, I believe we have often been guilty of the former sin. Let us awaken to the fact that active, energetic, aggressive and progressive leadership is needed in pharmacy to-day, that our organization is the natural one to assume such leadership, and then let us "roll up our sleeves" and go at the job.

THE DEPARTMENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY

C. B. JORDAN—CHAIRMAN OF EXECUTIVE COMMITTEE, A. A. C. P., EDITOR OF THIS DEPARTMENT.

ADDRESS OF THE PRESIDENT OF THE AMERICAN ASSOCIATION OF COLLEGES OF PHARMACY.

BY J. W. STURMER.

Thirty years ago, when the world was young, this Association, then known as The American Conference of Pharmaceutical Faculties, also was young. It had had its birth in Richmond, the year before, and in 1901 the delegates had assembled in St. Louis in consultation of the case presented by this lusty infant which was encountering the hazards of a second summer, but which was also quite speedily cutting its first teeth.

Dr. A. B. Prescott, who had been chosen as the first president of the Conference, was sojourning in Europe, and the vice-president, Professor Joseph P. Remington, conducted the meeting. Professor Carl S. N. Hallberg, dynamic, and extraordinarily combative, functioned as secretary pro tempore. The meeting was orderly, and the discussions, though quite spirited, were carried on with due regard to the rules of parliamentary procedure. The reading of the president's address, which had come by mail from England, occupied only about three minutes—certainly not more than five minutes. It provided a precedent for brevity which has long since become inoperative, but which I shall not entirely ignore.

J. W. STURMER.

First impressions are deep: they are apt to endure. Thus I can still visualize the scene of that meeting at which the leaders of pharmaceutical education of thirty years ago so skilfully, and with the exhibition of so much spontaneous oratory contended with each other, and strove so earnestly to come to agreement. There were as many viewpoints as there were debaters, for then as now, each speaker labored under the handicap of human nature, which means that at times he was motivated by his emotions rather than by cold reason, and that matters were sometimes considered subjectively rather than objectively. Professors, despite their training in science, and their familiarity with methods of deduction as employed in science, act in debate very much like other human beings. Each has a distinct personality, and his thoughts evolve from a background of many other thoughts which he has thought before. Each has his own sense of perspective, and sees things in a light peculiar to himself. Viewing things subjectively is easy; viewing them objectively is possible only after much self-discipline. It was, therefore, a

great achievement, the agreement upon a policy of action for this newly-formed organization, an agreement which could not have been reached but for the liberal-mindedness and the spirit of generosity and of tolerance exhibited by the delegates who convened in 1901.

The topics of discussion centered upon membership, and upon requirements for admission to membership; and as evidence of the care which the Conference even then displayed in the matter, we have the records showing that of the twenty-one colleges which had sent delegates to Richmond, only seventeen were admitted at the St. Louis meeting, while the other four were held over for full investigation; and that but two of the new applications, out of a total of five, were acted upon favorably at that time. One of these two was the application of the School of Pharmacy of Purdue University, the application I had presented, and I was accordingly seated as an accredited delegate, with the privileges of a new Senator, who may listen, but who is expected to keep still.

It was at this meeting that I had forced upon my inner consciousness a fact of which I possessed academic knowledge prior to that time, but which I had not given a second thought; namely, the fact that I was predestined to line up with a certain group and not with the other group of delegates. To make this statement clear I would explain that in this baby organization a line of cleavage was already discernible, and that on certain questions the university schools were apt to be found in opposition to the independent colleges. The latter group was at that time the more influential by far, and we of the university schools constituted the proletariat. The chief point at issue between the two factions was whether store experience should or should not constitute a graduation requirement. An interesting argument on that topic, advanced not by educators but by pharmacists outside the educational field, involved the contention that the university colleges, because they accepted students directly out of high school, were creating an over-supply of pharmacists, and were demoralizing the business, while the independent colleges educated only apprentices who had already entered upon pharmacy, and hence could not be held responsible for the increase in the number of drug stores. We know now that neither group of schools had anything to do with the multiplication of drug stores, which was the natural result of the apprenticeship system, and of the absence of pharmacy laws, or of low registration requirements where laws were in operation.

But thirty years ago college education was on trial; colleges were on probation, particularly those of university connections. It was claimed that store experience constituted the only worth-while requirement for registration, and that pharmacists could be trained only in a store, during a period of apprenticeship, like a bricklayer is trained, or a plumber. One seldom hears these views expressed at present-day meetings, but in 1901 they carried much weight, and the hostility exhibited by many so-called practical men toward pharmaceutical education, created serious problems for the colleges. This antagonism toward education, shared at that time even by some of the state board members, accounts in large measure for the fact that pharmacy courses were at the outset, short-term courses, even in the university schools, and explains why this Association, in its earlier years, advanced but slowly, for the obstacles in its path were indeed formidable. It may be said, and probably in truth, that pharmacy would now be better off if the Conference had, at

the very beginning, adopted a full collegiate course for its membership schools. But everyone, familiar with conditions in the year of the St. Louis meeting, knows that such a procedure would have been out of the question.

Much water has flown down the Mississippi since then, and time has wrought many changes. The astounding accumulations in the realm of science, and particularly in the sciences upon which the practice of pharmacy is based, together with a clearer realization of the responsibilities which rest upon the compounder and purveyor of medicines, have made it imperative that the pharmacist of to-day be a person of sound education. Thus the colleges have finally come into their own; no longer are they on probation, and the old antagonisms have subsided.

To be sure, one still hears occasionally the familiar argument that a full collegiate course is not justified because of the fact that the pharmacist derives a large part of his income through merchandizing. But if we ask whether the person who tenders a prescription in a store where but two prescriptions are filled as a daily average is not entitled to the same competent service as is the person who patronizes a pharmacy where the daily prescription average exceeds two hundred, and if we ask whether the student who expects to obtain one-half of his income through merchandizing should have half a course, and he who expects to get only 20 per cent of his money for professional services, should receive but 20 per cent of the instruction in pharmacy, and if we ask, further, how we can tell which prospective pharmacist should receive the full course, which one-half of it, and which one but a homeopathic apportionment, the fallacy of this argument against adequate college education is quite apparent. Public interest cannot be ignored.

We must, to be sure, take cognizance of the conditions under which pharmacy is practice. Moreover, educators are, and should be, sincerely sympathetic with the practitioner of pharmacy who finds himself the victim of destructive competition. But the remedy for such ills afflicting the profession does not lie in shorter courses. Of this we who are in educational work are convinced. So are also the members of the National Association of Boards of Pharmacy, in recent years our staunch allies in the campaign for the elevation of professional pharmacy. Without their coöperation our progress would have been most difficult, and at times impossible. To them should be accorded full credit for their share in the achievement of placing pharmaceutical education upon a proper collegiate basis. It was, therefore, a happy thought which developed into the plan of our joint meetings with the N. A. B. P., and it was a proposal equally purposeful and wise which has resulted in our District Meetings where the board member and the teacher can get together for friendly discussion. We must see to it, however, that such District Meetings are made possible and practicable the country over, which in some regions is not now the case because of the great area comprising certain districts.

When we compare the conditions which now obtain with those of thirty years ago we cannot help but realize that our little ship which for so long buffeted the waves in turbulent waters, has at last found smoother sailing. We may now expect it to proceed on a fairly even keel. Gone and largely forgotten is the hostility toward the educational institutions of pharmacy. Covered by the leaf mold of time are the issues which so sharply divided the colleges, and there is no longer valid reason for two distinct parties in our Association. We have, it is true, and always shall have, campus-schools and urban schools, the latter with or without uni-

versity connections, and both groups are, of course, under the necessity of meeting problems incident to their respective environments. I see, however, no reason why there should not be complete agreement on the fundamental matters pertaining to our educational policy and pertaining to our standards. For years I enjoyed the opportunities and the privileges offered in a campus-school, and for a period nearly as long I have served in an urban college; and I can say in truth that I have observed no essential difference in educational ideals, in enthusiasm for research, in scientific spirit, or in the attitude toward the policies for which this Association now stands. I am therefore convinced that campus-schools and urban colleges may be made amenable to the same requirements, and that they may also be measured with the same yard stick. In the past there may have been a distinct disagreement as to educational policies, but this is not now the case. Indeed, so strongly am I convinced on this point that I would express the hope that at no distant date the urban colleges of the great state of New York may find it expedient and wise to re-enter this Association.

The standard under-graduate course in the year of the St. Louis meeting was in American universities a course of four years. It is of that length to-day. It will be of that length thirty years hence. Whatever improvements have been made in collegiate education in these last three decades, have not involved an extension beyond the four years. The improvements have been in kind and in quality. We also must now concentrate particularly on kind and quality of instruction. With lengthening we have done—and for a long time. Let us now give our throught, to the problem of employing wisely, and to the enduring benefit of our students, the additional year which has been made available. Since the new course is to become operative in 1932, we must, without fail, at this meeting, decide matters pertaining to the curriculum. To be sure, our Association has many interests, for it is interested in everything which affects pharmacy—interested in its research, its economic problems, its legislative matters, interested in the status of pharmacy in the Army, the Navy, the Public Health Service; interested in inter-professional relations. And this is as it should be. But let us not overlook the fact that at this meeting the report of our Curriculum Committee deserves our very particular attention, and so also does the report of our Committee on Syllabus, for we are now entering upon that phase of educational progress which has to do with kind and quality, and the curriculum and the syllabus have bearing upon the kind and the subject matter of our new four-year course.

As to the quality of instruction, we shall never be able to say the last word on that theme. Yet we must agree that the larger the quantity of college work provided, the greater is our responsibility with respect to its quality. Our Association has not been oblivious to the necessity of establishing requirements, regarding certain factors involved in quality of instruction, and has even gone so far as to set up standards for the evaluation of the faculty. Thus, there must be a certain number of teachers, a number large enough so that no single instructor need cover too much ground, or teach too many hours. Each instructor must have had adequate academic preparation, etc. But in the last analysis, the satisfactory evaluation of a faculty is still a thing impossible, for we have not as yet succeeded in setting up standards pertaining to those inherent qualities of character and of personality by virtue of which a good teacher exerts certain powers of inspiration and of leadership

to which are due in so large a measure his outstanding success with his subject and with his students. Our professor, it appears, cannot be assayed, cannot as yet be evaluated, cannot be "rated" as a baseball player is rated. This being the fact—and we admit it—is there nothing further that this Association may do—do now—that would tend to influence favorably the quality of instruction? Let us see:

As practical folks we all agree that a community of 5000 inhabitants may reasonably expect better service if there is but one, well-equipped drug store, with ample stock, and with a competent pharmacist always on duty—better service than can be had if there are three or four small drug stores, each engaged in a desperate struggle for existence. And as practical folks, intimately conversant with the facts pertaining to schools of pharmacy, do we not all agree that if we have too many schools, it would not be reasonable to expect each to provide the quality of instruction to which the student is entitled? Of course we agree. As practical folks we know positively that any given state, or any given region within a state, will be better served by one first-class school than by two or three small ones. And if this be our conviction, should this Association not look with disfavor upon the establishment of new schools in regions where they are not needed? True enough, the schools now in operation cannot preempt certain territory as their own, for the rights connected with squatters' sovereignty are not recognized in the educational field. Nor can this Association allocate territory as the sales manager of an industrial concern allocates territory to one of his salesmen. But this Association can use its influence, and can offer wise counsel, tending to prevent the establishment of a new school which in the light of human knowledge could not be expected to conform to the spirit as well as to the detailed regulations of our association standards, and for the simple reason that it would lack the potentiality of growth to the point at which a first-class corps of teachers could be maintained.

I do not know of any region east of the Mississippi, where there is room for another new school. Indeed, in some states we have more schools than can be adequately supported, a condition which militates against the progress which pharmaceutical education should make. If we consider population, or the number of pharmacies, or of registered pharmacists, does South Carolina need two schools? Does Indiana need four? Are not four enough, if not more than enough, for Ohio? Or for Pennsylvania? Or for Michigan?

It may be that the survey of pharmaceutical education which is in prospect, and which is to be conducted under the auspices of the American Council on Education, will result in a reduction in the number of schools of pharmacy, just as the survey of medical education, conducted about two decades ago, caused a reduction in the number of medical colleges, thereby raising the standard of medical education.

To be shot at sunrise on some future date, even though the date be not close at hand, is not an alluring prospect. Certainly, we cannot expect volunteers to offer themselves for the ceremony. But this Association may, in the meantime, in the anticipation of the survey of pharmaceutical education, do much to lessen the number of future executions. We may discourage the establishment of new schools. We may even, tactfully, and with wise diplomacy, become active in an effort to bring about the merger of existing schools where such a course seems to be indicated. Fewer schools mean better ones. As practical folks we realize that a limitation of schools will accomplish more in raising the quality of instruction than

we could hope to effect by specific technical requirements. So I am submitting to you, under the caption, "Raising the Quality," these suggestions, in the hope that they may prove provocative of discussion, which in turn may eventuate in wise decisions. And I would submit to you, in this connection, but a single definite recommendation, namely this: that a committee be appointed to study our membership requirements and to prepare the way for such changes in our standards as may be deemed necessary for the best interests of the future of pharmacy.

The functioning of this Association in all matters of regular business is handled so expertly by our Secretary, our Executive Committee and by our other committees, that it has become unnecessary, and indeed confusing, to have such topics discussed in the President's Address. Accordingly, I need but voice my high appreciation of the service rendered by my colleagues in office, to thank you sincerely—all of you—for the gracious compliment which, probably more out of friendship than for any other reason, you paid me when you elected me to this office, and to submit this message to you for your kind consideration and your judgment.

REPORT OF THE FAIRCHILD SCHOLARSHIP EXAMINATION.

The Fairchild Scholarship Examination was held as usual on the second Monday in June. The questions were prepared by the members of the faculty of Duquesne University, Pittsburgh, Pa., under the Chairmanship of Dean Hugh C. Muldoon. The papers were graded by Dean G. A. Bergy of the University of West Virginia. Neither of the schools aiding in the preparation and grading of the papers had candidates for the examination. The usual care was exercised in handling the papers.

The results of the examination are as follows:

	Pharmacy.	Chemistry.	Therapeutics, Bacteriology.	Pharmaceutical Botany.	Pharmaceutical Arithmetic.	Average.
1.	91	96	89	86	100	92.4
2.	81	91	86	94	100	90.4
3.	83	93	90	83	92.5	88.3
4.	87	91	87	77	97.5	87.9
5.	78	90	84	85	95	86.4
6.	63	83	87	82	100	83
7.	64	78	81	87	100	82
8.	64	80	80	89	92.5	81.1
9.	57	73	92	83	100	81
10.	69	73	87	82	82.5	78.7
11.	62	76	71	85	97.5	78.3
12.	70	76	87	78	80	78.2
13.	63	83	79	64	97.5	77.3
14.	64	67	88	78	87.5	76.9
15.	68	75	86	65	85	76
16.	61	71	83	75	90	76
17.	60	79	83	79	72.5	74.7
18.	58	77	89	86	60	74
19.	79	77	76	80	55	73.4
20.	64	63	77	63	85	70.4
21.	56	66	66	76	87.5	70.1
22.	38	66	84	80	77.5	69.1
23.	77	54	81	73	57.5	68.5
24.	54	61	73	64	88	68
25.	72	65	93	76	30	67.2

26.	63	69	77	40	75	64.8
27.	53	62	71	56	75	63.4
28.	54	58	71	75	50	61.6
29.	53	63	69	42	70	59.4
30.	61	47	54	56	77.5	59.1
31.	58	49	75	66	45	58.6
32.	53	55	69	46	65	57.6
33.	39	43	75	39	90	57.2
34.	59	31	81	58	50	55.8
35.	46	51	59	28	80	52.8
36.	44	27	65	75	52.5	52.7
37.	55	46	62	64	25	50.4
38.	44	29	70	38	65	49.2
39.	39	41	70	37	50	47.4
40.	36	33	49	56	48.5	44.5

The highest percentage in pharmacy was 91; the lowest, 36. Eight of the students averaged more than 75. The general average was above 56.

The highest record made in chemistry was 96; the lowest, 27. Fifteen of the candidates averaged more than 75. The general average was above 60.

The highest percentage in Therapeutics and Bacteriology was 92; the lowest, 49. Twenty-six candidates averaged 75 or more. The general average was above 72.

The highest record in Pharmaceutical Botany was 94; the lowest, 28. Sixteen candidates averaged above 75. The general average was about 65.

The highest record in Arithmetic was 100, five of the candidates making that record; the lowest 25. The general average was above 70.

The highest general average was 92.4; the lowest, 44.5. Sixteen averaged above 75. The general average was about 65.

The one of highest average ranked first in Pharmacy, Chemistry and had perfect in Arithmetic.

The one with second highest general average ranked first in Pharmaceutical Botany and had perfect in Arithmetic.

The one highest in Therapeutics and Bacteriology had a general average of 67.2.

The one highest in Pharmaceutical Botany had a general average of 81.1; above 75 in all branches except Pharmacy.

Those making 100 in Arithmetic averaged, respectively, 92.4, 90.4, 83, 82, 81, in the examination.

Comparisons have been made of the examinations of candidates from the same school; only in very few instances from both of those making high and low records, could deductions of value be drawn. In most of the records there are interchanging high and low marks; also there are examples of one candidate of a school surpassing the other by an average per cent of 50; the same applies to a certain extent to the individual—in a number of instances the percentages, high or low, are not uniform.

The Committee is grateful and thanks Dean Muldoon and members of the faculty for preparing the questions for the examination and Dean Bergy and the members of the faculty for grading the papers. Among other comments by Dean Bergy are the following:

"I hereby declare (referring to the nom de plume of the first candidate) as the candidate receiving the highest rating with a general average of 92.4. The second highest (referring to nom de plume) received a general average of 90.4. He states further, "Both men are of unusually superior grade as is indicated by the thoroughness in which each answered his questions."—

Respectfully submitted

H. C. CHRISTENSEN, A. PH. A.
W. M. HANKINS, N. A. B. P.
J. W. STURMER, A. A. C. P.
E. G. EBERLE, *Chairman.*

THE WINNER OF THE FAIRCHILD SCHOLARSHIP FOR 1931.

LOUIS MAGID.

Winner of the Fairchild Scholarship for 1931.

Louis Magid won the Fairchild Scholarship for 1931. It is awarded by competitive examination to a student of a college of Pharmacy, member of the American Association of Colleges of Pharmacy; the scholarship has a value of $500.00. The winner is a native of Tampa, Fla., and a graduate of the University of Florida. The money is to be used in post-graduate work at any school of Pharmacy the winner may select. The scholarship was founded by Samuel W. Fairchild of New York; this year forty students competed, representing twenty-five schools. This year's Fairchild Scholarship Committee was composed of H. C. Christensen, Chicago; Julius W. Sturmer, Philadelphia; W. M. Hankins, Daytona Beach, Fla.; respectively, the presidents of the AMERICAN PHARMACEUTICAL ASSOCIATION, the American Association of Colleges of Pharmacy; the National Association of Boards of Pharmacy and the Editor of the JOURNAL A. PH. A., E. G. Eberle.

Last year Mr. Magid won the David Ramsaur medal for highest scholastic record and a $500.00 scholarship at the University. He is enrolled in the graduate school of the University of Florida, majoring in pharmacy

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THE SECOND NATIONAL CONGRESS OF THE ITALIAN PHARMACEUTICAL CHEMISTS AND CELEBRATION OF THE 5TH CENTENNIAL OF THE COLLEGE OF CHEMISTRY AND PHARMACY.

Attention is directed to a brief article in the May JOURNAL, page 513, relating to the venerable institution mentioned in the title, the 5th anniversary celebration of which took place in Rome during the week of May 26th. The opening ceremonies of the congress were under the direction of Secretary-General Dr. Ruggero Ruggeri, who gave a history of the College of Pharmaceutical Chemists and stated the purpose of the organization of pharmacists. Several speakers representing the Government commended the service of pharmacy. Dr. Teofilo Mariani, president of the College, spoke of the activities of the institution, tracing its formation to an organization which antedated it, namely, a Druggists' College and in that connection the president brought the history of the period into the picture.

The Secretary-General gave a résumé of the association affairs, legislation and the progress of pharmacy and its connection with public health matters. A report on "Social Insurance against Illness and Pharmaceutical Sanitary Assistance" received considerable attention, and legislation relating to pharmacy was freely discussed. Visits were made to the Hall of Cosmas and Damien, patron saints of pharmacy, and to His Excellency, Benito Mussolini.

Announcement was made that the Italian Society had accepted membership in the International Pharmaceutical Federation. The organization was well pleased with the results of the Congress and the anniversary celebration.

THE DEPARTMENT OF THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY

President, W. M. Hankins, Daytona, Fla. J. W. Gayle, *Treasurer*, Frankfort, Ky. Chairman of Executive Committee, A. C. Taylor, Washington, D. C. *Secretary*, H. C. Christensen, 130 N. Wells St., Chicago, Ill.

ACTIVE MEMBER STATES.

Alabama	Indiana	Montana	Rhode Island
Alaska	Iowa	Nebraska	South Carolina
Arizona	Kansas	Nevada	South Dakota
Arkansas	Kentucky	New Hampshire	Tennessee
Colorado	Louisiana	New Jersey	Texas
Connecticut	Maine	New Mexico	Utah
Delaware	Maryland	North Carolina	Vermont
D. of Columbia	Massachusetts	North Dakota	Virginia
Florida	Michigan	Ohio	Washington
Georgia	Minnesota	Oklahoma	West Virginia
Idaho	Mississippi	Oregon	Wisconsin
Illinois	Missouri	Pennsylvania	Wyoming
		Porto Rico	

ADDRESS OF THE PRESIDENT OF THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY.*

BY W. M. HANKINS, PRESIDENT.

Mr. Chairman, Fellow Members of the Association and Friends:

The honor of greeting you as your president on this occasion, the twenty-eighth annual convention of the National Association of Boards of Pharmacy, is one of which I am keenly sensible. To me it is a happy as well as a responsible function to address you, for you scarcely need to be reminded that this is the second time in the history of our Association and the first time in twenty years that the president has had the privilege of presiding at a convention in his home state. The other instance was when E. O. Engstrom of Pittsfield, Massachusetts, presided at the Boston meeting in 1911. It is my added pleasure, therefore, to greet you in the name of my native commonwealth and of this city which is your host.

WM. M. HANKINS.

It was fitting, when you chose to hold your annual convention in Florida, that you should have elected the great and truly remarkable city of Miami as the place of your meeting. Here you will find true expression of that which is Florida—a nation's playground, a workshop of happiness, all that calls upon the spirit of youth and robust achievement in a man or a country. Miami, little more than three decades old and youngest of Florida's three chief cities, typifies the joyous

* Miami, Florida, July 27, 1931.

efflorescence that rewards the energy of nature and of man in this southern frontier of our nation. While you are here this week, the hospitable people of this city will afford you many an opportunity of observing and enjoying the semi-tropical wonders of Miami and its environs. The committee in charge of the entertainment program has spared nothing in planning to make your stay happy as well as profitable. The people of this city appreciate the honor of your official visit, and I know, from past experience of their hospitality, that you will be welcomed and made to feel at home wherever you go.

IN MEMORIAM.

It is appropriate now, before we proceed with the more material affairs of our convention, that we should pause here to honor the memory of those of our beloved members who have been taken in death since last we met together. They are nine in number, two being past-presidents. I shall read their names:

Mason G. Beebe, Vermont
A. E. Carlson, Nebraska
J. Fuller Frames, Maryland
Charles Gietner, Missouri
President 1920–21
Wm. Mittelbach, Missouri
President 1912–13
Ralph C. Root, Vermont
L. Schockey, Colorado
H. H. Turrittin, Nevada
Jos. F. Voight, Tennessee

The passing of these men has left us bereaved and filled with regret. Our Association already feels the loss in their departure and will continue to do so through the years to come. At one of the later sessions of this convention, opportunity will be given some of their colleagues, who knew them well, to render more particular tribute to the memory of these departed. For the present, that we may be made more mindful of the inevitable end that awaits us all, and thus strengthen ourselves anew to perform faithfully and well our allotted tasks while life remains, allow me to quote these impressive lines:

"Death is the universal tragedy of Nature. We see it in the falling leaves and in the withering flowers; we feel it in the deepening shadows of the fading day—hear its moan in every wintry wind; but, it is only when this tragedy is brought home to us by a vacancy in the heart or at the hearthstone that we are reminded of man's mortality, and admonished that friendship's hour is fleeting."

AFFAIRS OF THE ASSOCIATION.

The National Association of Boards of Pharmacy is, of course, a non-profit taking organization. Nevertheless, we must have funds to carry on our work and therefore we are keenly interested in our financial statements, as these are the measure of our activities. Our budget is limited according to income.

Our cash assets on July 1, 1930, were $12,588.81; at the close of this year, June 30, 1931, $11,638.97, showing a net decrease of $949.84, but as the sum of $648 is due from the AMERICAN PHARMACEUTICAL ASSOCIATION for traveling expenses, this will be cut to $301.84. Our income and expense accounts balanced in so far as

current expenses were involved; in fact, there was a surplus, but this was not sufficient to cover the appropriation for the Department of Education, the sum of $2333 having been expended during the year for publication of the bulletins. As details are given in other reports, I shall not burden you with further statistics here other than to say that we are most fortunate in having our reciprocity income remain at approximately $21,000 both last year and this. Prior to the increase in fee, our annual income averaged about $16,000 and we were faced with a considerable annual deficit as our budget totalled $20,000. The past year has proved most conclusively that we can definitely count on our income in hard times as well as in prosperous eras. The demand for reciprocity seems to be stable. Therefore, I believe that so long as we limit our total annual expenditures to $20,000 we shall not run into any financial difficulties.

LEGISLATION.

This was a very active legislative year with at least forty state assemblies in session. Pharmacy bills were introduced in a considerable number of states: measures some of which were good, some bad, others indifferent. However, as Chairman Winne of the Legislative Committee has a detailed report ready for you, I shall not intrude upon his province.

But I do wish to say that there was a considerable amount of agitation in nonprerequisite states for the college requirement, which is most encouraging. The honors go to South Dakota and Maine for enacting such laws. Massachusetts and Missouri made noble attempts which did not meet with success in their legislatures. Another prerequisite bill is now pending in the Georgia legislature that seems to have a splendid chance of being enacted. We hope that the remaining states without college requirements will make similar attempts when their legislatures convene again so that two years hence we can report that pharmacy is on a 100% college basis.

TWENTY YEARS AGO.

Just as newspapers find it interesting to print daily a short synopsis of the news of "Twenty Years Ago," we may find it interesting to look back to 1911 and compare the entrance standard in pharmacy of that year with the requirements in 1931. This retrospect will show just what we have accomplished by our legislative program. The National Association of Boards of Pharmacy does not take credit for all the work accomplished in that period, for a considerable portion of it has been done by the state pharmaceutical associations. Nevertheless, the N. A. B. P. has furnished the inspiration and encouragement necessary to have secured these higher standards and it has always been prepared to lend a helping hand.

Preliminary Education.—In 1911, twenty-three states required absolutely no evidence of any preliminary education, not even graduation from grammar school. To-day, only one state is in that class. Nine states in 1911 were requiring graduation from high school and eight were requiring one or more years of high school. This year, forty-six states require high school graduation and two states require high school attendance.

College Requirements.—Here the gulf is wider. Only three states, Pennsylvania, Rhode Island and New York, were requiring college graduation in 1911.

In 1931, we find thirty-eight states requiring college attendance, and, in all but three of them, graduation is compulsory.

Experience.—Whereas one could write examination on experience alone in some forty-five states in 1911, this figure has dwindled down to eleven states at present.

I think we have reason to be proud of this record of progress. When we read our annual legislative report and hear that but one or two states have enacted the college prerequisite, or that another state has adopted the high school requirement, we are likely to feel discouraged at the slowness of favorable change and wonder whether the effort put forth is worthwhile. An occasional retrospect, like the one which I have just sketched for you, is necessary to properly evaluate this important activity of the N. A. B. P.

THE FOUR-YEAR COURSE.

The National Association of Boards of Pharmacy has always taken a forward-looking attitude toward matters educational. In keeping with this policy, our Association in 1927 recommended the adoption of the four-year course as the minimum standard not later than 1932. The College Association did not approve the four-year standard until the following year, 1928, and then its decision was considerably influenced by the fact that the N. A. B. P. had already set the standard. I am emphasizing this fact for the reason that there has been some agitation against the four-year course from pharmacists, from the pharmaceutical press, and even from colleges of pharmacy. These objectors are only a small minority and it is well for us to remember that we, as an association, have taken a position in this matter which we should be prepared to defend, if called upon to do so.

The principal argument advanced against the four-year course is that the opportunities in pharmacy do not warrant it. This may be true of the present. However, we must not overlook the fact that we can enlarge the opportunities in pharmacy, and we can do so only by raising our educational standards to such a degree that we can command professional recognition. This is not idle theory; other professions have done the same. Recently I saw a letter from a well-known authority in medicine, whose name I do not feel at liberty to disclose without his permission, in which he said that pharmacy is now faced by the same problems that confronted medicine some years ago. "These problems," he said, "can be solved by pharmacy, just as they were by medicine, if the state examining boards will demand a proper standard of pharmaceutical education. The responsibility is ours."

That the adoption of the four-year course is bringing professional recognition to pharmacy is already evident. I am informed that the central office was requested to edit two monographs on "Pharmacy as a Career," during the month of June. One is being published by no less an authority than the Bureau of Education of the Department of the Interior of the United States Government, and the other is being prepared by the Institute for Research, headed by Drs. John A. Lapp and George F. Zook. These pamphlets will be circulated among students by high schools, colleges and libraries, and will be of tremendous help in interesting the right type of students in considering the adoption of pharmacy as their life work. The fact that we have not been given this professional recognition heretofore, and that now it is being won, is ample proof of what the four-year course will do for pharmacy.

As the National Association of Boards of Pharmacy has already adopted the four-year minimum, the only remaining duty is for member boards to adopt such rulings or make such amendments to the pharmacy law as may be necessary to enforce the four-year course requirement. In many states such action will be entirely unnecessary as the change is automatic, for the reason that graduation from a generally "recognized" college of pharmacy is specified in the law. Where such measures are necessary, however, let me urge that such steps be taken immediately. Even though the first four-year class will not graduate until 1936 and though three-year graduates who matriculated prior to 1932 will be admitted to board examination, the adoption of definite standards by the Board will discourage colleges from offering other than the nationally recognized curriculum, and thus students will be saved from a useless waste of time and money in taking a pharmacy course that cannot be given board recognition.

DISTRICT MEETINGS.

I need not dwell on the value of our joint district meetings with the college faculties, as the enthusiasm with which our members look forward to these meetings is ample proof of their importance. Five district meetings were held this year—the same number as last year—the honors going to Districts Nos. 1, 2, 3, 4 and 6. In our annual conventions, we have such a mass of important business to transact in a short period of time that there is small opportunity of getting personally acquainted and talking over individual problems with board members from neighboring states. That can be done at district meetings, and there, too, you can learn what some of our college friends think of the board examination questions you have been preparing, and they likewise will be glad to listen to your suggestions for improving curriculum, teaching methods, etc. The criticism is most impersonal and enlightening. My only regret is that the great distances in the West have made it impossible to hold district meetings in that part of the country due to the time and expense involved and the limited budgets of the Boards of Pharmacy. I hope that some day we shall find a way of overcoming this handicap, possibly through legislation that will permit annual renewal fees on Certificates of Registration sufficient to enable the individual board members to attend, not only district meetings, but our annual conventions as well.

CONTACT WITH BOARD MEMBERS.

As I glance over the attendance records of previous conventions and district meetings, I note that out of our membership of forty-nine boards, there are but thirty-five at most that take an active part in the meetings of the Association. We have about fifteen member boards that have little contact with the work of the National Association, and I believe it is our duty to find a way of reaching them. The non-attendance of these states is due, not to a lack of interest but to a lack of funds necessary for sending a delegate to the annual convention.

This year, Secretary Christensen has done some valuable work toward the solution of this problem by attending the meetings of the State Pharmaceutical Associations in the Western States as President of the AMERICAN PHARMACEUTICAL ASSOCIATION.

I wish it were possible for us to make a friendly call at least once each year on every board that has not participated in either the national convention or the district meeting. I realize that our budget will not at present permit this expenditure, as our $3000 appropriation for travelling cost must cover the expenses of the district chairmen, the officers of the Association, the Executive Committee and delegates to special functions or meetings at which we should be represented. However, this suggested activity is one that should have first consideration when our exchequer accumulates funds.

RECOMMENDATIONS.

I wish to call your attention to the need of improvement in the method of handling our resolutions. Often, so little time is available at the convention that resolutions are not always placed before us in a comprehensive and definite form. This is not necessarily the fault of the members of the committee, but is due rather to the fact that rush of business makes it impossible to give resolutions adequate consideration.

Therefore, I recommend that our constitution be amended to authorize the creation of a Standing Committee, to be known as the Committee on Resolutions, with the term of one member expiring each year and whose successor shall be nominated and elected by the same procedure that controls election of members of other standing committees. By creation of this permanent committee, resolutions may be submitted through the entire year and thus the committee members will be enabled to complete most of their report before the convention meets, thereby obviating duplications and confusion.

N. A. B. P. HEADQUARTERS.

Only those of us who have visted the "Home Office" in Chicago realize the tremendous amount of detail work demanded each and every day of the year in taking care of the multiplicity of inquiries, or comprehend how blessed we are with a most efficient organization. Those of you who have not had this opportunity will find it a genuine pleasure and source of enlightenment to visit our national headquarters and see how well the affairs of the Association are handled—how complete and accessible are the files and what an assuring and pleasing atmosphere has been created by the organization.

Secretary Christensen and his assistants are to be commended for the splendid efficiency with which our national affairs are managed, and I am certain that they are always delighted to have a member visit them during a sojourn in Chicago.

CONCLUSION.

It seems to me that our Association, to assure continued and progressive success, should concentrate on the problem of securing increased attendance at each successive convention. This problem in my opinion should have the undivided and unremitting attention of the Association. The expense necessarily incurred by those compelled to travel the greater distances is so great that some of the board members deem it prohibitive. We cannot very well prescribe any method of solution that would be applicable in every case, for the problem of each state is unique within itself. Nevertheless, the importance of solving this problem still remains

before us as an ever-present reality, and I consider it a prerequisite to our continued success that we set before ourselves its solution as an objective to be finally attained with the ultimate result of 100 per cent representation of state boards at our national conventions.

If greater interest could be aroused in our district meetings I am sure the natural sequence would be increased interest in the national convention. This being the case, I think it would be well for the chairmen of the several districts to lay greater emphasis on the conferences during the coming year and thus see if their efforts in the districts will not bring about increased attendance at the national convention a year hence.

At this time I wish to express my appreciation to all officers, committeemen, members and the Editor of the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION for the assistance that they have rendered during my administration. Though all of our committees have done everything that could be asked of them, I wish to make special mention of the outstanding contribution of the committee in charge of the Department of Education. The work done by this committee speaks well for pharmacy, and indicates to kindred professions that we are in step with progress of to-day.

PLANT SCIENCE SEMINAR.*

BY EARL B. FISCHER, COLLEGE OF PHARMACY, UNIVERSITY OF MINNESOTA.

The Plant Science Seminar, a national organization, affiliated with the AMERICAN PHARMACEUTICAL ASSOCIATION, opened its ninth annual convention in Gainesville, on July 20, 1931, the sessions being held in the Chemistry-Pharmacy building on the campus of the University of Florida. The opening address of welcome was made by Dr. Townes R. Leigh, dean of the College of Pharmacy. Dr. B. V. Christensen, Chairman of the Seminar, presented a splendid address on "Research in Pharmacognosy." It follows:

ADDRESS OF THE CHAIRMAN PLANT SCIENCE SEMINAR.**

RESEARCH IN PHARMACOGNOSY.

BY B. V. CHRISTENSEN.[1]

Pharmacists are interested in plants as sources of crude drugs and because of the substances in them which give them physiological activity or medicinal value. Dragendorf states that anything that is of vegetable growth that is used in medicine is a medicinal plant. It has been estimated that about 75 per cent of the materials prescribed daily by the physician or purchased directly from the druggist for the relief or cure of the various ailments of mankind, are derived from the vegetable kingdom (1); yet it appears to be the general opinion that vegetable drugs have been largely displaced by medicochemical remedies. It appears also to be the opinion of many that pure chemical products are better and more effective medicinal agents than crude vegetable preparations, with their "superfluous inactive constituents or plant dirt."

An editorial in a recent issue of *J. A. M. A.* (2) explains this situation rather aptly. "The popularity of endocrine, vitamin and diverse synthetic medicinal products in recent years has tended to obscure the significance of active constituents derived from the plant kingdom. The greater number of dependable and useful substances of natural origin in the therapeutic armamentarium may be forgotten because of the emphasis placed on synthetic products offered by the

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* Report of Proceedings of the Ninth Annual Meeting, College of Pharmacy, University of Florida, Gainesville, Florida.

** Ninth Annual Session of Plant Science Seminar, Gainesville, Fla.

[1] Professor of Pharmacognosy and Pharmacology, University of Florida.

chemical industry. If it had not been for leads obtained from natural products, the synthetic therapeutic products might not have come into existence. Frequently the standard by which the usefulness of a synthetic product is determined depends on a natural product. For instance, the activity and suitability of synthetic products intended for local anesthesia is determined by comparison with cocaine, the alkaloid of coca leaves, a natural local anesthetic, which with its derivatives is not yet surpassed in general usefulness and efficiency by any synthetic product. The subordination of interest in natural products is the outcome of recognized commercial possibilities of synthetic products rather than a limitation of opportunities for achievement along fundamental and practical lines. The sterility that has possessed this field is to be deplored."

There is on the market at present a large number of supposedly isolated active constituents, many of them duplications with possibly minor modifications. However, there is a difference of opinion as to active constituents of many crude drugs and in some cases there is a question as to whether the therapeutic value of a vegetable drug is due to the activity of one constituent or due to the combined action of several constituents. Quinine has been for many years considered the specific active constituent of cinchona bark which makes it effective as a remedy for malaria; but that this may not be true is indicated in a recent report (3) issued by the Malaria Commission of the Health organization of the League of Nations, wherein it is stated that the Indian Public Health Service used powdered cinchona bark in the treatment of malaria during the World War and obtained 50% of cures as against 30 per cent with quinine. This report further indicates that the therapeutic value of the powdered bark was also found to be greater than that of "Quinetum," which term in India means "All the crystallizable alkaloids in the bark of *C. succirubra*."

Sollman states that isolated Digitalis principles have proven disappointing (4). Many physicians are returning to the old form of administering Digitalis, namely, the powdered leaf. They claim that they get more positive and certain results from this form of administration than from any of the so-called isolated active principles. According to Cushny, the most suitable preparations of Digitalis are the tincture and the powdered leaf (5). In discussing certain so-called pure principles of Digitalis, Solis-Cohen & Githens says, "It is doubtful whether any of these purified substances occur in the natural leaf. All may be artificial products" (6).

Referring again to the above-mentioned editorial in *J. A. M. A.*, it closes with this statement, "Thorough investigation of the natural products is likely to prove more instructive and important for a selected materia medica than the multiplication of synthetics, which in many instances represent minor modifications of a single product."

From the foregoing it may be implied that there is not only opportunity but urgent necessity for research in Pharmacognosy. This research should preferably be carried out along three lines, namely:

First, investigation or reinvestigation of vegetable drugs that are now used to a limited extent; those that have been dropped from our modern materia medica, and those now in regular use but with questionable standards. Much of our knowledge of vegetable drugs has come to us through empiricism and much has been obtained from the natives and laity of various countries. The uses of some of our most important drugs were learned from the Indians and it is only recently that the scientific basis for the therapeutic uses of some of them has been discovered. Many have been discarded because they have failed to respond to the usual tests of the pharmacological laboratory. There must be some basis for the use of such herbs as Boneset, Chamomile, Tansy, etc., which served for so many years as home remedies and which were found in the attics of the pioneers of this country. It may be that a thorough investigation would discover a valid scientific basis for their use or some important active principle as in Ephedra, used for centuries in China but only recently investigated.

Rusby has pointed out several cases of mistaken identity (7). Here again, is another line of reinvestigation open to pharmacognosists. There is a possibility that in some cases inferior substitutes have ruined the medicinal reputation of the authentic drug.

Further, there is the question of standards for many vegetable drugs now in use. In the April 1931, issue of *Drug Markets* (8) it is indicated by Dr. Durrett that U. S. P. standards are too high in some instances. It is said that the U. S. P. requirements would exclude great quantities of perfectly good nux vomica and that the Gum Benzoin standard is too high. It is also stated that there may be trouble in meeting the U. S. P. requirements for Hyoscyamus. These few illustrations not only indicate the opportunities but the necessity for research along this line.

Second, investigation of new plants suggesting possibilities of medicinal value. This point presumably requires little discussion. However, I presume that occasionally most of us get reports of cases of poisoning of animals or humans occurring from eating fruits, leaves, flowers or some part of a plant not previously known to be toxic. Such occurrences suggest medicinal possibilities of the plant concerned, as history tells us that the therapeutic uses of several of our most important drugs were suggested from such experiences. There are several such plants in this locality some of which are now under investigation. Pharmacognosists should note such occurrences and take advantage of such opportunities, not for the purpose of discovering another medicinal plant but rather because of the possibility of discovering a drug better and more efficient for some therapeutic purpose, than any now listed in our materia medica.

Third, cultivation of medicinal plants. Heretofore, we have depended largely on natural supplies of vegetable drugs to meet our needs. However, due to the advances of agriculture and industry and because of ruthless methods of collecting, natural supplies are being rapidly depleted and in some instances have already become exhausted.

This has been regarded with deep concern and, consequently, a serious and determined interest is now being manifested all over the civilized world in cultivation, as well as proper collection, of medicinal plants. This situation was anticipated by a wise government in the United States as early as 1883, when a resolution by a congressman from Massachusetts was passed by Congress appropriating $25,000 for the study and cultivation of medicinal plants. From this as a nucleus has developed the present Bureau of Plant Industry which is fostering plant research and collecting and disseminating information pertaining to drug plants. Interest in the cultivation of medicinal plants in the United States has spread to the Colleges of Pharmacy and at the present time there are sixteen such institutions which operate Medicinal Plant Gardens (9).

In Europe there are several national associations for the promotion of cultivation of medicinal plants, which apparently have made some progress. For instance, in the report of the Fifth National Congress on the Cultivation of Medicinal Plants in France, held in 1928, it was stated that the culture and collection of medicinal plants in France and the French Colonies had been so extended and so successful that the importation of crude drugs had been materially reduced.

Apparently several of these national associations joined forces in 1928 to form "The International Association for the Promotion of the Production and Utilization of Medicinal, Aromatic and Allied Plants" the fourth Congress of which is now in session in Paris (July 16th–21st). (The Plant Science Seminar has been extended an invitation to join this association.) This association was organized "With the view of collecting all work relating to the cultivation, breeding, utilization and scientific testing of medicinal, aromatic and allied plants, and of spices, together with the commerce in them, and at the same time to secure the assistance of Agriculture, Commerce, Industry and Science." From a study of the reports of previous Congresses, furnished through the courtesy of Dr. Wolfgang Himmelbaur, it is observed that considerable progress has already been made in enlisting the interest of governments in legislating for the protection of native plants and in securing the coöperation and endorsement of industry in developing and maintaining high standards of quality.

The cultivation of medicinal plants is not only a problem of scientific importance but of commercial importance as well. The destructive methods of harvesting and the lack of foresight in providing for a continuous supply of cinchona has meant a financial loss of millions of dollars to South America. On the other hand a keen appreciation on the part of Europeans has provided Java with a stable income of considerable importance. That the United States may make the same mistake is indicated in a recent excellent article on Cascara Sagrada by Starker and Wilcox (10) and from the fact that other countries have been experimenting in the cultivation of this tree and in one instance, at least, with considerable success.

The cultivation of medicinal plants offers opportunities for scientific investigation otherwise difficult or impossible; for instance, the effect of fertilizers on quantity and quality of plant constituents. A study of the literature reveals that practically nothing has been done along this line. Then again, it would afford a means of correct indentification and authentication of species, as referred to by Dr. Rusby and third, it would make possible the selection of species or varieties possessing the most desirable medicinal qualities. For instance, in this locality we have several varieties of *Monarda punctata* differing in yield of oil and also thymol content of oil. We are now separating and identifying these varieties for the purpose of determining which of them

will yield the most and best quality of oil. Fourth, it makes possible the combination of hardy qualities, such as resistance to disease, with producing qualities such as was done in grafting and budding the yellow cinchona on the red cinchona stock.

Finally, the cultivation of medicinal plants would make possible scientific experimentation on time of harvesting, methods of harvesting and methods of curing and preparing for the market as affecting quality of crude drugs. Undoubtedly up to the present, pharmacognosists have learned more from collectors and growers regarding methods of collection and curing than collectors have learned from pharmacognosists. The reverse should be true. Pharmacognosists should determine the best methods to be followed conducive to high quality and then disseminate this information to collectors and growers.

The Plant Science Seminar should be among the leading organizations in encouraging, planning and promoting research on the cultivation of medicinal plants. It is true that some work has already been done along this line but it has been largely isolated, spasmodic and lacking in unification. The U. S. Bureau of Plant Industry recently issued a list of Medicinal Plant Gardens in the U. S. together with the plants being grown in each. Would it not be a good plan for a committee from this Seminar to get in touch with the chief pharmacognosist of the U. S. Bureau with a view toward mapping out a coöperative scheme whereby experimentation could be conducted in these various gardens for the purpose of determining in what localities certain plants could best be grown, best cultural methods and methods of preparation for market? With such a unified scheme it seems that much more could be accomplished than through isolated and spasmodic experimentation. Might it not be possible, that in the course of time from information collected through such a scheme, to map out a plan for drug production that would be of immense value, and particularly in case of a national emergency. Furthermore, it appears that there should be more coöperation between this Seminar and the industries. Several pharmaceutical manufacturing concerns are cultivating medicinal plants and undoubtedly have collected valuable information which ought to be available to growers and collectors. Possibly a committee from this Seminar could arrange for a mutual exchange of information with these concerns and make arrangements for the dissemination of this information. Very likely these concerns also have many problems for solution and pharmacognosists could undoubtedly be of service in helping to solve such problems.

This Seminar might also render valuable service along the lines of education, not only within the colleges but outside as well. In the colleges more time should be devoted to the study of Pharmacognosy and especially with the inauguration of the four-year curriculum. That this is essential is evident from the fact that 75 per cent of the medicines handled by the druggist are of vegetable origin, as stated in the introduction. There is no danger that the pharmacist will know too much about drugs. We get many letters from pharmacists asking for information as to how and when to collect drug plants and how to cure and prepare them for market, undoubtedly for the purpose of passing this information on to a patron. Ability to give such information would, no doubt, increase the respect of the public for the pharmacist.

Information sent to growers and collectors through leaflets, bulletins or letters would aid in improving the quality of crude drugs placed on the market, especially if care is taken to emphasize that quality affects price. There is a crying need for education along the line of conservation of natural resources and in this we may also render a distinct service.

The Plant Science Seminar should serve as a central organization or as a coördinating unit for the encouragement, planning and development of research in Pharmacognosy. This organization should make recommendations regarding courses of study in colleges, particularly in relation to scope and character of information, *i. e.*, it should formulate and adopt educational policies. There has been considerable confusion regarding the use and meaning of such terms as—materia medica, pharmacognosy, pharmaceutical botany and pharmacology. A committee to study and make recommendations regarding the meaning of these terms was appointed at Rapid City in 1929, but apparently nothing has been done. This matter, consequently, is to be discussed before the Materia Medica section of the A. A. C. P. at Miami.

The science of Pharmacognosy is relatively new and this organization is young in years, but both have broad and far-reaching potentialities and it is up to us to develop these to the utmost.

SUMMARY OF RECOMMENDATIONS.

(1) That a committee be appointed to draw up a constitution and by-laws to be considered at the next annual meeting.

(2) That a committee be appointed to systematize all proceedings of this Seminar and to consider ways and means for publication.

(3) That the advisability and feasibility of joining the International Association for the Cultivation of Medicinal Plants, etc., be considered by this Seminar.

(4) That a committee be appointed to get in touch with Dr. W. W. Stockberger of the Bureau of Plant Industry with a view toward mapping out a systematic scheme of coöperative experimentation on the Cultivation of Medicinal Plants.

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(2) *J. A. M. A.*, 96 (1931), 863.

(3) League of Nations Document C. H. Malaria 84 (1) dated Geneva, April 5, 1930, by Prof. Ciuca. (Through courtesy of T. E. Wallis reader in Pharmacognosy, University of London.)

(4) Sollmann, "A Manual of Pharmacology," 3rd Edition, 1927, page 528.

(5) Cushny, "Pharmacology and Therapeutics," 9th Edition, 1929, page 459.

(6) "Solis-Cohen & Githens, Pharmacotherapeutics" (1928), page 1263.

(7) *The Messenger*, 6 (1929), 232.

(8) *Drug Markets*, Vol. XXVIII (April 1931), 333.

(9) U. S. D. A., Bureau of Plant Industry, 1930 (*List of Medicinal Plant Gardens*).

(10) *Am. J. Pharm.*, 103 (1931), 73, 147.

As is customary, the program consisted of papers on various phases of science concerning economic and drug-producing plants; addresses by a number of men prominent in the development of the important industries of Florida, such as the tung oil, turpentine and sponge industries; inspection of the medicinal plant garden of the College of Pharmacy of the University, trips through the campus and to outlying districts offering opportunity for the study of local trees, shrubs and plants of tropical and subtropical nature; and a round table discussion of methods of teaching pharmacognosy and botany in colleges of Pharmacy.

A number of papers and addresses are worthy of special mention. Dr. Lenthall Wyman, of the United States Forestry Service at Starke, Florida, gave an address on methods of turpentining as followed in Florida. The address was illustrated by slides showing the different methods of scarifying trees for the production of oleoresin of turpentine. Mr. Wyman gave figures to illustrate the variation in yield according to the method followed. He also pointed out the enormous loss to the State of Florida caused by forest fires, stating that a well-organized program of reforestration with prevention of forest fires would allow for the utilization of thousands of acres of land now idle and non-productive.

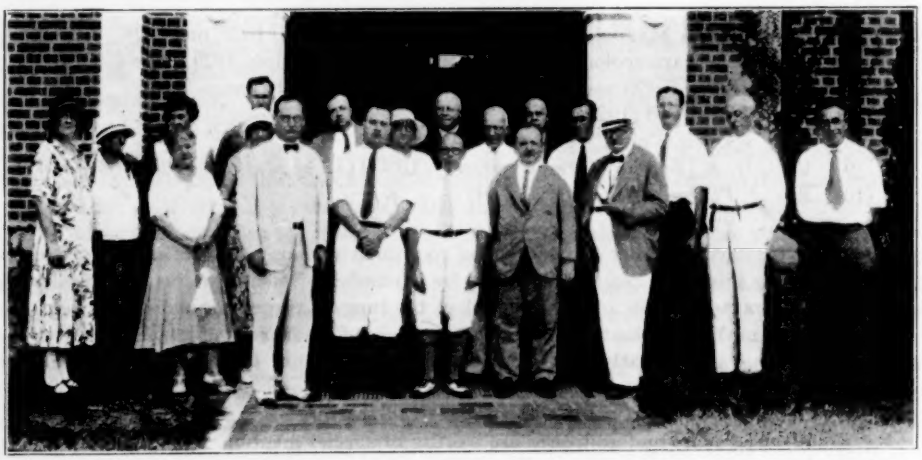
Another address was delivered by C. F. Speh, secretary of the Pine Institute of America, on uses of turpentine and other naval stores products. Mr. Speh exhibited specimens of various commercial products and pointed out their importance. He stated that more rosin is used for the manufacture of soap than for any other purpose and that its second most important use is for sizing writing and printing paper. The importance of turpentine in the industries was emphasized by the statement that its adaptability to many special uses is so perfect that no substitute can satisfactorily take its place. Among the important uses mentioned were, as a volatile thinner for paints, in the manufacture of patent leather and as a raw material for producing synthetic camphor. In closing, he pointed out that the turpentine industry is gradually increasing and that Florida is one of largest producers of turpentine and its products in the world.

Dean Floyd of the College of Agriculture, and Harold Mowry of the Agricultural Experiment Station conducted a tour of the campus and the Experiment Station grounds, pointing out the many trees and shrubs of particular interest to the visiting scientists. Members of the Seminar were very much interested in the tropical and sub-tropical plants, particularly such as camphor, eucalyptus, holly, sweet gum and numerous species of palms.

Another address of particular interest and value was made by B. F. Williamson of Gainesville, on the tung tree and tung oil. Mr. Williamson discussed the history of the tung tree, its introduction and propagation in Florida, methods of harvesting the fruits and extracting the oil. He also exhibited specimens of the tung fruit and samples of Chinese and American oil obtained therefrom. The tung oil industry represents one of the newer developments in the industries of Florida, the oil being of value in the manufacture of varnishes of the spar type, as well as in paint manufacture.

A round table discussion of methods of teaching botany and pharmacognosy was the feature of the Wednesday morning session, together with an address by Dr. E. L. Newcomb, on the aims and purposes for which the Seminar was founded. The round table discussion of teaching methods was led by Dr. H. W. Youngken, and his introductory address was stimulative of considerable discussion, those taking part being Dr. B. V. Christensen of Gainesville, Dr. L. K. Darbaker of Pittsburgh, Dr. E. N. Gathercoal of Chicago, Dr. E. L. Newcomb of New York, Dr. H. B. Lemon of Buffalo, N. Y., Dr. O. P. M. Canis, Prof. E. B. Fischer of Minneapolis and others.

A trip of inspection was made to the plants of the Retort Chemical Company, near Gainesville and to the turpentine distillery at Pfifer. This trip afforded an opportunity for first-hand



MEMBERS AND VISITORS IN ATTENDANCE AT THE NINTH ANNUAL MEETING OF THE PLANT SCIENCE SEMINAR.

Front Row, left to right.—Mrs. B. V. Christensen, Mrs. J. A. Koch, Dr. B. V. Christensen, Prof. E. B. Fischer, Dr. A. B. Lemon, Dr. H. W. Youngken, Dr. O. P. M. Canis, Dean J. A. Koch, Dr. L. K. Darbaker. Back Row.—Mrs. L. K. Darbaker, Miss Koch, Mrs. L. E. Harris, Dr. L. E. Harris, Dr. P. A. Foote, Mrs. E. N. Gathercoal, Prof. E. N. Gathercoal, Dr. E. L. Newcomb, Dr. A. W. Matthews, E. P. Claus.

study of the destructive distillation of old, dead, resinous pine wood and of the various operations and processes followed in the production of turpentine, rosin and other naval stores' products.

Dr. F. H. Heath and Dr. P. A. Foote of the University of Florida, gave an illustrated lecture on the sponge industry, another important economic item produced in the State of Florida. Methods of collecting the sponges by specially trained divers and collectors, mostly of Greek descent, methods of treating the sponges to make them commercially useful and of marketing them were described and illustrated by means of slides. Specimens of the natural sponge, of the various types of sponges, such as the sheep's wool, elephant's ear, grass sponge, wire sponge, silk sponge, etc., were illustrated and exhibited.

The Thursday sessions marked the close of the meetings of the Seminar at Gainesville. The morning was devoted to an inspection of the Medicinal Plant Garden of the University of Florida. Dr. B. V. Christensen, director of the gardens, described the experimental work which is being carried on to determine the practicability of growing various species of mints and other plants of medicinal importance in the state of Florida and the production of oil and other products

from them. Of particular interest was the work on spearmint, peppermint, monarda, etc. The method of tapping the sweet gum tree to obtain American styrax, a balsam used in pharmaceutical practice, was also demonstrated. In the afternoon Dr. H. W. Youngken, of Boston, delivered an illustrated address on the anatomy of Derris, a vegetable substance said to be non-toxic to humans but to be of value as an insecticide. Dr. E. L. Newcomb, of New York, presented a paper on the "Valuation of Medicinal Plant Gardens." It was brought out in the latter paper that many colleges of Pharmacy, maintaining medicinal plant gardens as a part of their educational facilities, do not place an inventory value on them, which they should properly have, since a considerable expenditure is made annually in their maintenance.

Not all of the meetings of the Seminar, however, were devoted to scientific study. Opportunity was afforded and time allotted for pleasurable outing. On Monday evening the entire group was entertained at a lawn supper at the home of Dr. and Mrs. B. V. Christensen, and on Tuesday afternoon the entire group was taken to Silver Springs to enjoy the boat ride in glass-bottom boats over the springs, and dinner at the lodge which followed. On Thursday evening, to mark the close of the Seminar, Dr. and Mrs. T. R. Leigh, entertained at a typical Mississippi watermelon cutting. The singing of negro spirituals by a negro quartet, the "toting of the watermelon" and the testing of its ripeness were carried out according to typical southern custom.

Opportunity for a further study of the flora of Florida was given when the Seminar group started its journey by motor to Miami, the meeting place of the 79th Annual meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION. Stops were made en route at the Bok Tower and at Avon Park, where Mayor C. S. Donaldson described and pointed out various native and exotic plants in the unique municipal collection maintained by the city of Avon Park. On Saturday the journey was continued, the route leading across Southern Florida from Ft. Myers through the everglades to Miami. On Sunday various side trips were arranged in and around Miami, inspection of plants being made at Orchid Jungle, Chapman Field, Matheson's Hammock and the Deering Estate.

At the closing business session, Toronto, Canada was selected as the meeting place for the tenth session of the Plant Science Seminar. Earl B. Fischer, professor of Pharmacognosy and Pharmaceutical Botany of the College of Pharmacy, University of Minnesota, was selected to serve as chairman for the coming year with Dr. O. P. M. Canis as secretary. Resolutions were unanimously adopted expressing the thanks of the Seminar to President J. J. Tigert of the University of Florida and Dean Townes R. Leigh for the use of the splendid facilities of the University and the College, all of which had been placed, unqualifiedly, at the disposal of the Seminar; also, the press of Gainesville for its coöperation in making the meetings a success, and especially to Dr. B. V. Christensen, chairman, who so capably and efficiently arranged the interesting program and conducted the meetings. The opinion was unanimous among the members, that the present seminar had proved the most instructive and the most valuable of any so far held.

For program of the Seminar see Official Program, page 12; also June JOURNAL, page 613 and July, page 729.

PHARMACY WEEK PLANS.

At a joint meeting of members of the Executive Committee of the N. A. R. D. and members of the Council of the A. PH. A., held during the recent pharmaceutical meetings in Florida, plans were approved for aggressively promoting support of observance of Pharmacy Week--October 11–17, 1931.

The splendid and outstanding work of the late Dr. Robert J. Ruth, former Chairman of the National Pharmacy Week Committee, representing the N. A. R. D. and the A. PH. A., which has functioned for the past seven years, was reviewed by the Committee.

On account of the close coöperation between Dr. Ruth and Dr. E. L. Newcomb, secretary of the N. W. D. A., and the great service which the N. W. D. A. has rendered during the past three years in supplying beautiful lithographed material for use during Pharmacy Week, the joint committee asked Dr. Newcomb to carry out the plans laid by Dr. Ruth for observance of Pharmacy Week this coming October.

The selection of a permanent chairman will not be made until after the 1931 observance has been completed.

ASSOCIATION BUSINESS

AD INTERIM BUSINESS OF THE COUNCIL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 1930–31.

Office of the Secretary, 10 West Chase Street, Baltimore, Md.

LETTER NO. 12.

July 16, 1931.

To the Members of the Council:

117. Use of Text of the N. F. Motion No. 39 (see Council Letter No. 11, page 597) has been carried and Mr. Martindale has been so notified.

118. State College of South Dakota Student Branch. Motion No. 40 (see Council Letter No. 11, page 597) has been carried and the application and Constitution and By-Laws of the Branch are approved.

119. Prescription Ingredient Survey. Motion No. 41 (see Council Letter No. 11, page 600) has been carried and Chairman Gathercoal has been advised.

120. Election of Members. Motions Nos. 42 and 43 (see Council Letter No. 11, page 600) have been carried and applicants numbered 429 to 438, inclusive, and H-27 are declared elected.

121. N. F. Exhibit at the Meeting of the American Medical Association (see Council Letters No. 10, page 509, and No. 11, page 597). Professor Nichols advises that the total expense of the exhibit was $79.60 and that a complete report on the exhibit will appear in an early edition of the JOURNAL. It will also be referred to in the report of the Committee on N. F. at Miami.

122. Life Membership. Dr. J. Leon Lascoff annually offers as a prize in the College of Pharmacy, Columbia University, a Life Membership in the A. PH. A. This year the prize has been won by Morris Lipetz, and Dr. Lascoff has forwarded his check for $100.

No. L. M.-2, Morris Lipetz, New York, N. Y.

(*Motion No. 44*) *Vote on application for Life Membership.*

123. Applicants for Membership. The following applications properly endorsed and accompanied by the first year's dues have been received:

No. 439, W. G. Allen, c/o Tampa Drug Co., Tampa, Fla.; No. 440, Alfred C. Andersen, 4407 No. 28th St., Omaha, Neb.; No. 441, George F. Archambault, 160 King St., Springfield, Mass.; No. 442, Arthur Baker, 388 Cross St., Malden, Mass.; No. 443, C. Arthur Bond, 3601 Biscayne Blvd., Miami, Fla.; No. 444, Frances E. Borda, 843 Koehler Ave., Donora, Pa.; No. 445, Henry A. Bridges, 627 Chauncey St., Pittsburgh, Pa.; No. 446, Charles James Brinkerhoff, 800 Pacific Ave., San Pedro, Calif.; No. 447, Emma M. Buyniski, 118 Vernon Street, Worcester, Mass.; No. 448, O. S. Ellvin, 418 Main St., Stockton, Kans.; No. 449, Charles T. Fawcett, 419 East Penn St., Princeton, Ill.; No. 450, Geo. F. Flashman, 1702 South 11th St., East, Salt Lake City, Utah; No. 451, Claire Frick, 2819 Shawhan Ave., Pittsburgh, Pa.; No. 452, John T. Goorley, Purdue University, School of Pharmacy, West LaFayette, Ind.; No. 453, J. M. Guerra, 415 South Guerra, McAllen, Texas; No. 454, Jas. G. Halford, Johnston, S. C.; No. 455, Carl M. Harmon, 3217 Oakwood Ave., Columbia, S. C.; No. 456, John Read Hedges, 4 Iowa Apartments, Iowa City, Iowa; No. 457, Daniel W. Houser, 1203 Wayburn St., Detroit, Mich.; No. 458, William E. Hubbert, Allen Bldg., Dallas, Texas; No. 459, Marion L. Jacobs, 208 North St., Chapel Hill, N. C.; No. 460, Eleanor M. Kairis, Siani Hospital, Baltimore, Md.; No. 461, Myer Katz, 237 Spruce St., Chelsea, Mass.; No. 462, Keith Kilrain Keller, 705 Sixth Ave., Brookings, S. Dak.; No. 463, Albert J. Kinsley, 407 Rosewood Terrace, Rochester, N. Y.; No. 464, Harry Koretsky, 45 Sea View Ave., Malden, Mass.; No. 465, Albert P. Lauve, 6056 Coliseum St., New Orleans, La.; No. 466, Harry Lindblom, 1220 Eddy St., Chicago, Ill.; No. 467, Pascual Diaz Martinez, Chacon No. 3, Havana, Cuba; No. 468, Robert T. McClinton, 7223 Thomas Boulevard, Pittsburgh, Pa.; No. 469, Albert N. Mehaffey, 1100 Lincoln Road, Miami Beach, Fla.; No. 470, E. N. Meuser, 412 Albert Ave., Saskatoon, Sask., Canada; No. 471, Joseph Menard Millender, 4554 Garfield Ave., St. Louis, Mo.; No. 472, Henry C. Miller, Amana, Iowa; No. 473, J. Harold Roche, 1201 Lincoln Road, Miami Beach, Fla.; No. 474, Benjamin Schultz, 2069A East 23rd St., Brooklyn, N. Y.; No.

475, Frank M. Smith, P. O. Box 503, Charleston, S. C.; No. 476, I. Vela Vasquez, Box 202, Hebbronville, Texas; No. 477, H. Wayman Wainwright, 8 State St., Vineland, N. J.; No. 478, E. P. Walsh, Conway, S. C.; No. 479, Sam E. Welfare, 534 S. Main St., Winston-Salem, N. C.; No. 480, Ransome J. Williams, Mullins, S. C.; No. 481, Philip R. Wood, 928 N. W. 24th Court, Miami, Fla.; No. 482, Carlton E. Young, Woodville, Texas.

(*Motion No. 45*) *Vote on applications for membership in the American Pharmaceutical Association.*

124. Applicants for Membership on Account of Contributions to the Headquarters Building Fund. The following non-members of the A. PH. A. have pledged $25.00 or more to the Headquarters Building Fund and have made a cash payment of $5.00 or more. They are entitled to membership and you are requested to vote on the applications which have been properly endorsed.

H-28, Charles B. Laegler, 346 North Ave., Highland Park, Ill.; H-29, Gershon Peshkin, 33 Guilden St., New Brunswick, N. J.

(*Motion No. 46*) *Vote on applications of contributors to the Headquarters Building Fund for membership in the American Pharmaceutical Association.*

E. F. KELLY, *Secretary.*

LETTER NO. 13.

August 6, 1931.

To the Members of the Council:

The Second Meeting of the Council was held in the Hotel Columbus, Miami, Florida, on Monday, July 27, 1931, beginning at 9:25 A.M. The following members were present: Christensen, Hilton, Beal, Arny, Bradley, Adams, Eberle, DuMez, Jordan and Kelly.

The reading of the minutes of the First Meeting was dispensed with as they had been published.

The secretary reported that Motions Nos. 44, 45 and 46 (see Council Letter No. 12, preceding) had been carried and applicants for membership numbered L. M.-2, 439 to 482, inclusive, and H-28–H-29 were declared elected.

125. Committee on Finance. The following report was read by Chairman Bradley and was received and adopted on motion of Beal, seconded by Adams and carried.

"The Committee on Finance submits the following report to date.

"The duties of this Committee include the preparation of the annual budget of the ASSOCIATION; the selection of certified public accountants to audit the accounts of the ASSOCIATION; the recommendation of special appropriations; the approval by the chairman of the committee of all bills against the ASSOCIATION, before they are paid; and such other matters as may be referred to it. While the fulfillment of these duties is frequently perfunctory, this is not always so, and they carry considerable responsibility with them. They are important for the well-being of the ASSOCIATION and they have been attended to conscientiously during the past year."

126. Committee on Property and Funds. The following report as read by Chairman Christensen was received and adopted, on motion of Beal seconded by Bradley and carried:

"In accordance with Article VI of Chapter IV of the By-Laws of the Council, the Committee on Property and Funds hereby recommends to the Council the following banks and safe deposit vaults:

DEPOSITORIES FOR FUNDS.

The Baltimore Trust Company, Baltimore, Md.
The Maryland Trust Company (formerly Drovers and Mechanics National Bank), Baltimore, Md.
Merchants and Newark Trust Company, Newark, N. J.
Boston Penny Savings Bank, Boston, Mass.

DEPOSITORIES FOR SECURITIES AND FUNDS.

Baltimore Trust Company, Baltimore, Md.—Safe Deposit Boxes."

After discussion of the report, Beal moved that it was recommended to the Committee to consult with the chairman of the Headquarters Building Committee and the secretary, as to the advisability of investing part or all of the cash balance in the Building Fund in short term

Government securities, the Committee to have power to act. The motion was seconded by Bradley and carried.

127. Committee on Publications. Chairman DuMez read the following report which was received and approved on motion of Beal seconded by Christensen and carried:

"Your Committee on Publications respectfully submits the following report on its activities since the meeting held in Baltimore, Maryland, and on the present status of the Association's publications:

"*Journal:* The total expenditures for the publication of the Journal for 1930, including the Editor's salary were $20,499.39, ($15,499.39 + $5000.00). The total expenditures for 1929 were $19,885.92 ($14,885.92 + $5000.00), which represents an increase of $613.47.

"The receipts of the Journal for advertising, subscriptions, sale of single copies, reprints, etc., for 1930 were $9922.92. The subscription credit amounted to $5756.60, making the total receipts $15,679.52. As the receipts for 1929 amounted to $17,851.41, this represents a decrease of $2171.89.

"The total expenditures of $20,499.39 less the receipts of $15,679.52 shows the net cost of the Journal for the year to be $4819.87. The net cost for 1929 was $2034.51, which represents an increase of $2785.36. This increase is largely the result of the falling off of the credit allowed for membership subscriptions which amounted to $7320.20 in 1929 and only $5756.60 in 1930.

"The Journal is still being printed and distributed by the Mack Printing Company of Easton, Pa.

"Further details relative to the publication of the Journal will be presented by Editor Eberle.

"*Year Book:* The double volume, Nos. 16 and 17, of the Year Book covering the years 1927 and 1928 was distributed in March of this year. Work on volume 18 is progressing satisfactorily. Galley proof has already been received for that portion of the book covering Association data, and the remainder of the manuscript is almost ready for the printer.

"The contract for printing, binding and distribution has again been awarded to the Lord Baltimore Press of Baltimore, Maryland.

"*Index of Proceedings and Year Books:* 1047 copies of this book were printed and bound. Up to June 20, 1931, 357 copies had been sold or otherwise disposed of, leaving a stock on hand of 690 copies.

"*National Formulary:* Up to June 1, 1931, a total of 44,584 copies were printed and bound in buckram and 500 copies were bound in leather. Of the number bound in buckram 41,996 copies had been sold and 76 copies distributed gratis. Of the number bound in leather, 136 copies had been sold and 12 copies had been distributed gratis. There were sold since March 1, 1930, 4390 copies bound in buckram and 7 copies bound in leather, leaving a stock on hand of 2512 copies bound in buckram and 352 copies bound in leather.

"Since May 1, 1930, permission was granted to use portions of the text to the following: Dr. Glenn L. Jenkins and Dr. A. G. DuMez for use in a textbook on Pharmaceutical Chemistry; Prof. H. J. Fuller of the Connecticut College of Pharmacy for use in 'A Synopsis of the United States Pharmacopœia and National Formulary Preparations,' P. Blakiston's Son & Co., for use in 'Potter's Therapeutics,' 15th Edition; Williams & Wilkins Co. of Baltimore, for use in a book on 'Bioassays' by Dr. J. C. Munch; W. H. Martindale, for use in the revision of The Extra Pharmacopœia, 20th Edition.

"*Pharmaceutical Recipe Book:* Up to June 1, 1931, 5000 copies of the Recipe Book had been printed and bound. Of this number, 3466 copies had been sold and 89 complimentary copies had been distributed, leaving a stock on hand of 1445 copies.

"In conclusion, your Committee desires to again thank the members of the Association for their coöperation in promoting the interests of its publications and to thank the editors of the various pharmaceutical journals for the fine spirit which they have shown toward the publications of the Association and for their coöperation in giving publicity to the activities of the Association."

128. Editor of the Year Book. Editor DuMez read the following report and it was received and adopted on motion of Adams, seconded by Arny and carried:

"The double volume of the Year Book containing numbers 16 and 17, and covering the years 1927 and 1928, was distributed during the latter part of March of this year. Two causes

are responsible for the tardy appearance of this volume, namely: The unexpected amount of work in connection with getting out the Collective Index, and a misunderstanding with the printer. The first difficulty will not be experienced for sometime again, and it is expected that the latter will be avoided in the future as the printer has promised to give the next volume his prompt attention.

"Volume 18, covering the year 1929, is already in the hands of the printer and galley proof for that portion of the manuscript dealing with ASSOCIATION data has been received. The remainder of the manuscript is almost completed and will be given to the printer within the next ten days. If the printer lives up to his promise, we may, therefore, expect the book to be ready for distribution not later than the middle of October.

"Some of the journals have already been abstracted for volume 19, covering the year 1930. However, the larger portion of the work in the preparation of the manuscript for this volume still remains to be done. It is hoped that some definite policy with respect to the content and form of the book will be adopted as a result of the findings of the committee appointed for this purpose last year. Even though the policy adopted should require a decided change in the make-up of the book, it is believed that the abstracts already prepared may be used to advantage and that the work already done will not have been in vain.

"Your attention is called to the fact that the ASSOCIATION has for the past several years received a grant from the Board of Trustees of the U. S. Pharmacopœial Convention for incorporating certain abstracts of particular import in connection with pharmacopœial revision work. Any policy involving extensive changes in the present make-up of the book should, therefore, be adopted only after consultation with this Board."

129. Committee on Standard Program. Chairman Hilton reported verbally that the committee had functioned as heretofore in arranging the program of the seventy-ninth annual meeting and that there were no departures of interest from the standard program. The report was received and adopted on motion of Beal, seconded by Adams and carried.

130. Editor of the Journal. The following report by Editor Eberle was received and approved on motion of Bradley, seconded by Christensen and carried:

"The report of the Editor presented herewith deals with the business of 1930 and, as reports of other years, this is compared with the preceding twelve months.

"The expenses of 1929 were $14,885.92, not including the Editor's salary; the receipts were $10,531.21. Deduct the receipts (not including membership subscriptions) from expenses—shows a net cost of $4354.71; add the Editor's salary and we have a cost of $9354.71, or a gross cost of $1.76 per volume. The credit on membership subscriptions—one-half of paid dues for the year (not Headquarters members), less 20% for overhead, which for 1929 was $7320.20, deducted from gross cost, $9354.71, leaves $2034.51 net cost, including the Editor's salary.

"The expenses of 1930 were $15,499.39, not including the Editor's salary; the receipts were $9922.92. Deduct the receipts (not including membership subscriptions) from expenses shows a net cost of $5576.47; add the Editor's salary and we have a cost of $10,576.57, or a gross cost of $1.87 per volume. The credit on membership subscriptions—one-half of paid dues for the year (not Headquarters members) less 20% for overhead, which for 1930 is $5756.60, deducted from gross cost $10,576.57, leaves $4819.87 net cost, including the Editor's salary. The smaller return from membership subscriptions accounts chiefly for the greater net cost in 1930. The membership subscriptions for 1931 thus far show an excess over 1930 and indicate a credit about equal to that of 1929.

"The number of copies printed in 1929 was 65,500; in 1930, 66,000. The publication costs in 1929 were, $10,685.01; in 1930, $10,871.58. Mailing costs of the JOURNAL in 1929 were $604.88; in 1930, $638.51. Mailing back numbers in 1929 cost $33.16; 1930, $21.70. Photographs and engravings other than those from Mack Printing Company in 1929 cost $245.71; in 1930, $346.03. Binding journals in 1929 cost $27.25; in 1930, $27.25. Stationery and office supplies in 1929, cost $86.00; in 1930, $93.00. Hauling and freight in 1929 cost $11.13; in 1930, $19.31. Affidavits in 1929 cost 25¢; in 1930, 50¢. Telephone and telegraph service in 1929 cost $73.47; in 1930, $73.42. Clerical, including Professor Olsen's contributions to Department of Business Management, in 1929 cost $1391.00; in 1930, $1376.00. Commission on advertising in 1929 cost $663.63; in 1930, $678.05. Refund on overpaid accounts in 1929 amounted to $5.23; in 1930, $11.50. Reprints in 1929 cost $815.38; in 1930, $1049.50. Office

postage and Parcel Post in 1929 amounted to $243.57; in 1930, $257.59. Collection charges in 1930, 35¢. Purchasing old journals in 1930 cost $15.00.

"The receipts for 1929 were $10,531.21; for 1930, $9922.92. Advertising in 1929 brought $7795.66, in 1930, $6880.89. Subscriptions in 1929 amounted to $956.07; in 1930, $1098.83. Single copies and bound volumes in 1929 brought $138.77; in 1930, $152.37. Reprints in 1929 brought $885.62; in 1930, $1080.76. Miscellaneous items in 1929 brought $755.09; in 1930, $653.25. The miscellaneous items in 1929 came from National Association of Boards of Pharmacy, $417.50; American Association of Colleges of Pharmacy, $300.00; for electros from G. D. Searle & Co., $34.34; binding Journals, $2.25; in 1930 the receipts from miscellaneous sources were from National Association of Boards of Pharmacy, $250.00; American Association of Colleges of Pharmacy, $300.00; $100.00 payment toward cost of articles with large number of cuts; for binding of journals, $3.25.

"At the beginning of 1930 there were several consolidations of firms which cut their contracts in half and this accounts for the shortage. Single copies and journals and reprints brought somewhat more. The receipts from the National Association of Boards of Pharmacy are somewhat less for 1930 than for 1929; that of the Association of Colleges of Pharmacy remains the same for 1930. We desire to thank both the Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy for their continued coöperation.

"The roster of Boards of Pharmacy is continued in each issue of the JOURNAL and is revised by Secretary H. C. Christensen and his office. It would seem, and that is the purpose of the ASSOCIATION, that the roster gives a valuable service, to the members of the boards, and for those who correspond with them seeking information.

"Members of the ASSOCIATION can be helpful in securing the interest and patronage of advertisers and such coöperation would be appreciated by them as well as the ASSOCIATION.

"The slightly larger publication costs ($186.57) of the JOURNAL are somewhat due to the greater number of pages (1360 against 1286) and larger number of smaller type pages. The somewhat higher mailing cost ($133.63) is accounted for in the same way. The higher cost for electros is accounted for by a larger number of illustrations required for articles. More reprints were made in 1930 than in 1929 and accounts for $234.22. The other items, such as clerical expense, office postage, etc., is about the same for both years.

"Up to July 1st of this year (1931) the receipts from all sources are $165.45 less than for 1930; the expenses, however, for all items up to July 1st are $464.61 less than for the same period of 1930.

"It should perhaps be stated that the JOURNAL gives publicity for the ASSOCIATION and for pharmacy in general; it is the point of contact with the pharmaceutical associations of other nations, their activities and their history; it aids and should in the carrying on of the work of the sections and the conferences. It renders service through its roster to the state associations and the Boards of Pharmacy, and its contributions to the Bulletins issued from the ASSOCIATION officers. The Editor is of the opinion, and acts accordingly, that the ASSOCIATION desires that this service be rendered.

"It is assumed that the JOURNAL is to express pharmacy as a profession, and we act accordingly. And this is becoming more and more pronounced in our relations. The Personnel Classification Board studies that phase and it is an influential factor in Board of Health connections, Hospital Pharmacy, Government Service, etc. Since 1928 the number of articles presented before the Sections has greatly increased and the JOURNAL is sought after more than ever before as a medium for recording researches, by other contributors, as the Government laboratories. There is continued coöperation with the National Formulary and U. S. P. Revision Committees. The JOURNAL serves in bringing the investigations of other associations and the laboratories to the attention of pharmacists and is the contact with pharmacy of other countries.

"In a general way it may be stated that from January 1930 to June 1931, not including the illustrations of the scientific articles which exceeded the others, there were 64 illustrations. The frontispiece, sketches and editorials numbered about 138 pages; Scientific Section, 644; news items, legal and legislative, state and other associations, required 200 pages; Department of Business Management and Commercial subjects, 102 pages; Practical Pharmacy and Committee Reports, 192; Minutes of the Association, House of Delegates, Sections, Conferences,

Law, Secretaries, etc., 184; Education and Legislation articles, 68; National Association of Boards of Pharmacy, 58; Colleges, 77; Proceedings of Local Branches, 100; Historical, 156; and other items, as Obituary, Book Notices and Reviews, the remainder.

"A number of articles may be referred to as examples and without seeking to strike comparisons of respective values of those mentioned and those that are not: The series of articles on Ephedra, Ergot, Viburnum, Hydrastis, Aconite, Digitalis, Squill, Strychnine, Amino Alcohols, Emulsions, Neoarsphenamine, Iodine, etc. Viewing in another way the reports on standards, prescription surveys, studies of stability, phytochemical notes, assays, bio-assays, the Bibliography of Research, appearing in each issue; or, again, the departments of the scientific subjects, education and legislative items, practical pharmacy subjects, discussions, addresses, reports of the conferences on Research, Pharmaceutical Secretaries, Law Enforcement Officials, the Department of Business Management and the historical contributions. All of the latter have value from various standpoints; perhaps the paper of this division that created the greatest interest was the one relating to the painting which was supposed to be the Laboratory of Davy, but proved to be the Laboratory of J. Bell &.Co., London, and the Editor had a picture of it enlarged.

"May the Editor be permitted to suggest that the departments relating to Commercial Interests, on Education and Legislation, Practical Pharmacy and Dispensing may be greatly extended and become of greater value and service if the members interested in these subjects will contribute to the Association Sections devoted to these subjects. An early preparation of the programs is desirable; immediately after the close of the annual meeting is best; thereby impetus is created which makes for great interest. The thought comes as this is being written, that very soon after the first of the year the chairmen and secretaries issue a call to members for contributions, and that just as soon as several contributions are received the work on topics by contributors be mentioned with or without the name of the contributor—this is a suggestive method—the efforts of one stimulate that of another. The JOURNAL has been interested in seeing a number of rather lengthy papers printed as monographs, and it is pleasing to report that one on 'Medicinal Trees of the United States' and another on 'Oregon Drug Plants' by Prof. E. T. Stuhr have been completed.

"The Editor has brought with him copies of these and of other monographs, the originals of which appeared in the JOURNAL.

"This report contains suggestions and other matter not contained in previous years because this report is to be presented in part before the House of Delegates, and it is hoped that making the delegates acquainted in this way with the possibilities of the JOURNAL will stimulate their interest and that of board members—they are entitled to the information and receive it through the JOURNAL, but it is hoped specific presentation will be welcome.

"Each year the delegates receive for their report the minutes of the General Sessions and the House of Delegates and throughout the year Secretary Kelly sends out bulletins of information on matters of interest which the ASSOCIATION is promoting.

"Thus far the JOURNAL has been practically able to maintain the number of its advertising pages, but, as stated, due to conditions there have been changes. Your coöperation in maintaining and adding to the advertising pages is respectfully asked for and for your assistance the Editor is thankful; he also desires to thank the patrons."

131. International Pharmaceutical Federation. As one of the reporters of the Federation, Editor Eberle submitted the following report which on motion of Adams, seconded by Christensen and carried, was received and adopted:

"The eighth general meeting of the International Pharmaceutical Federation was held at Stockholm, July 16–19, 1930, and the program is reported in the April JOURNAL for 1930.

"Through the courtesy of Secretary-General Hofman, a report was made of the meeting and is printed in the August number, 1930. There were delegates present from eighteen different countries and the opening meeting was held in the home of the Apothecary Society and opened by President L. Van Itallie who reminded the Federation that Carl Wilhelm Scheele was a Swedish pharmacist.

"The Pharmaceutical Society of Japan, with two thousand members, was elected to membership. A subject for discussion was the report of the Committee on Medicine in Ships by Messrs. Linstead, Van Itallie and Vavaseur. The information relative to the subject was furnished to Mr. Hugh N. Linstead, from this office.

"Another report of general interest was that of the Committee on International Nomenclature of Products.

"A report was made by Secretary Hofman on 'The Status of Pharmacists in Army and Navy Service and European Countries.' This was reported at the Baltimore meeting and is printed in the JOURNAL for June, pages 653–655, and a supplementary report is printed in the September JOURNAL for 1930, pages 1026–1029.

"The next meeting of the International Federation will be held at Prague in 1932.

"Since the foregoing report a letter has been issue by the President of the Federation announcing the election of T. Potjewijd, Chief Pharmacist of the Hospital of the University of Leyden, as Secretary of the Federation. The Secretary has assumed the duties and advised the members of the death of Dr. Albert Schammelhout. A brief sketch of him appears in the March number on page 298.

"A movement is on foot to have a meeting of the Federation in or near Chicago in 1933. The officers of the Federation are: *President*, J. J. Hofman, The Hague; *Vice-President*, M. G. Barthet, Paris; E. Host Madsen, Copenhagen; E. Saville Peck, Cambridge, England; H. Thoms, Berlin-Steglitz; Otto von Koritsansky, Budapest."

132. Commission on Proprietary Medicines. Chairman Beal read the following report:

"The Commission on Proprietary Medicines has been asked to ascertain 'To what extent, if any, the drug trade is responsible for the distribution of package medicines which profess to be cures or effective treatments for cancer, Bright's disease, diabetes or tuberculosis, or which contain habit-forming narcotic drugs in sufficient proportion to render them a factor in the creation of a drug habit or in satisfying such habit if pre-existing?' "

"Letters embracing the preceding questions were addressed to wholesale drug houses, to retail druggists, to the Proprietary Association, and to others. Members of the Commission have also personally interviewed various wholesalers and retailers upon the subject.

"The president of one of the largest wholesale drug houses in the central West replied to the effect that search of the stock of that establishment failed to bring to light any package remedy intended for self-medication which, either directly or by implication, professed to be a cure or an effective treatment for cancer, tuberculosis, diabetes or Bright's disease, or which contained habit-forming drugs in sufficient proportion to make it capable of creating a drug habit or to aid in the satisfaction of such habit when pre-existing. Replies from other large wholesale houses and from retail druggists in various parts of the country have all been to the same effect.

"The letter addressed to the Proprietary Association brought forth a reply stating in very positive terms that no member of that association manufactures any preparation intended for self-medication which in any way professes to be for the treatment of cancer, tuberculosis, diabetes or Bright's disease.

"Regarding habit-forming drugs the reply states that several members of that association produce preparations, principally for external use, such as corn removers, which contain extract of cannabis, but that in no case is the preparation of a character which could create or sustain a drug habit. It was also stated that until recently one member of the association had used 1.92 grains of opium to the fluidounce in a cough mixture, but that this had since been replaced by another ingredient.

"Thus far no evidence has come to the attention of this Commission tending to show that either the wholesale or retail drug trade are engaged in the distribution of package remedies for self-medication which are either directly or by implication held out to be effective in the treatment of tuberculosis, cancer, Bright's disease or diabetes, or which contain habit-forming drugs in such proportion as to render them capable either of creating a drug habit or of ministering to such habit when already created.

"If members of this ASSOCIATION have knowledge of facts which would justify a different conclusion, the Commission will be pleased to receive such information or to be put in possession of such data as will enable it to make proper investigation of the subject.

"From time to time medical journals report the discovery of concerns, frequently having in their service one or more regularly registered medical practitioners, which deliver through the mails or by express remedies put up in a form to resemble the common package remedies of the market, and which are alleged to be effective in the treatment of some of the previously named

affections, but so far as we have been able to discover these preparations are not handled by druggists.

"This phase of the subject has not been gone into with any degree of thoroughness for the reason that from the beginning of its existence the Commission has assumed a "hands off" attitude toward all questions which can be regarded as problems of the medical profession, believing that pharmacy will have sufficient employment in attempting to keep its own house in order.

"All establishments doing a fraudulent mail order business in package remedies can be effectively disposed of by fraud orders denying them the use of the mails. Certainly the offenses of such establishments should not be charged to the account of the drug trade.

NO EXCUSE FOR WORTHLESS OR FRAUDULENT PACKAGE MEDICINES.

"While there may be room for honest differences of opinion regarding the accuracy of the claims for the remedial value of a given drug or medicinal preparation, there can be no excuse for the deliberate promotion of a preparation by means of claims which the promoter must know to be false and fraudulent. To paraphrase a witty Frenchman, such an offense is worse than a crime, it is a blunder—a blunder which is certain to work economic injury to those who are responsible for it.

"The contents of the world's materia medica are open to all. Drugs of established therapeutic value are no more expensive or more difficult to obtain than those of doubtful merit. Expert medical advice as to the efficacy of a given combination of drugs for particular ailments, and expert pharmaceutical advice as to the best methods of manufacture can be obtained for reasonable fees, so that there can be no rational excuse for the existence of a package remedy that does not possess some appreciable degree of merit. The manufacturer who does not avail himself of these resources to insure that his preparation will do what he claims for it, or who attempts to popularize a valueless preparation must possess less business acumen than has commonly been attributed to the makers of such products.

"Advertising alone cannot create a permanent market for a package medicine that does not leave a sense of benefit in the minds of those who have used it. All of us can recall preparations introduced with a tremendous flourish of advertising which are now known only by a few time-stained packages on the shelves of ancient drug stocks, while other package medicines which have been on the market for longer periods than we can remember, are still having a steady sale, their use continuing in the same families from generation to generation.

"An advertising appropriation which only results in a single sale to a customer is largely thrown away. It is from repeated sales to satisfied users and from sales to other customers created by the recommendations of satisfied users that the manufacturer's profits must be mainly derived.

PROFESSIONAL AND ETHICAL RESPONSIBILITIES OF THE PHARMACIST.

"Owing to the peculiar nature of his occupation the pharmacist occupies a position of special trust and responsibility toward the community which he serves.

"The law grants him a privilege of compounding physicians' prescriptions and of dispensing medicines and poisons not equally granted to all members of the community, upon the theory that because of his technical training he is better qualified to discharge these functions with safety to the public health than is the untrained dealer in general merchandise.

"But special privilege implies corresponding responsibility. Part of the pharmacist's responsibilities are determined by statutory requirements concerning the dispensing of alcoholic liquors and habit-forming drugs, the sale and labeling of poisons, the misbranding and adulteration of drugs, etc., but there is an important field which cannot be reached by specific provisions of law, wherein the pharmacist's duties are ethical and professional, and must be determined by his sense of moral obligation to his fellow citizens and to his profession.

"That the pharmacist has in the main been faithful to his trust is shown by the disposition of unqualified dealers to make use of the titles pharmacist, druggist, drug store, etc., because of the knowledge that in the public mind these titles have usually been associated with integrity and fair dealing.

"In a leading case (West *vs.* Emanuel, 198 Pa. State, 180) the Supreme Court of the State of Pennsylvania has decided that a pharmacist cannot be held responsible for the effects of a proprietary remedy when he cannot be charged with knowledge of its composition.

"We can agree with the justice of this decision as it affects the legal obligations of the pharmacist, but not with the idea that some have drawn from it that he has no other obligation than to hand out the particular proprietary remedy which his customer calls for. There is a proper field for package remedies which are honestly made and honestly exploited, but it is as much the professional duty of the pharmacist to protect his patrons from being imposed upon by the vendors of fraudulent or worthless proprietary remedies as it is to protect them from the use of a defective drug or from the misuse of a dangerous chemical dispensed from his own drug stock.

"It is the opinion of this Commission that the professional obligations of the pharmacist require that he should absolutely refuse to be connected with the distribution of fraudulent or worthless package remedies, or to lend his name or reputation in aid of the distribution of remedies which are advertised in extravagant or misleading terms, or which are otherwise exploited in a manner inconsistent with the better traditions of pharmacy."

It was moved by Bradley that the report be received and read by Chairman Beal at the First General Session and following the address of Dr. Durrett. The motion was seconded by Adams and carried.

133. Election of Honorary Members. On motion of Eberle, seconded by Arny and carried, the following were elected as Honorary Members of the ASSOCIATION:

Dr. G. A. Burbidge of Halifax, Nova Scotia.
Dr. J. J. Hofman of The Hague, Holland.
Dr. William Mair of Edinburgh, Scotland.

134. Nomination of the Honorary President, Secretary and Treasurer of Association for 1931–1932. It was moved by Eberle that Henry S. Wellcome of London, England, be nominated to the House of Delegates as *Honorary President;* by Bradley that E. F. Kelly, Baltimore, Md., be nominated as *Secretary;* and by Beal that C. W. Holton, Essex Fells, N. J., be nominated as *Treasurer.* The motions were seconded by Arny and carried.

135. Annual Report of the Council to the House of Delegates. On motion of Beal, seconded by Adams and carried, the chairman and secretary were authorized to prepare and present the report to the House of Delegates.

136. Election of Members. The following applicants were elected members on account of the payment of dues, on motion of Bradley seconded by Adams and carried:

No. 483, Chas. H. Alderman, Jr., 1177 W. Flagler St., Miami, Fla.; No. 484, Charles F. Brow, Jr., 127 Stafford Road, Fall River, Mass.; No. 485, H. R. Monroe, 115 Ocean St., Jacksonville, Fla.; No. 486, Joseph J. Pokay, 58 N. W. 58th Ave., Miami, Fla.; No. 487, L. W. Renner, East Canton, Ohio; No. 488, Melville Halstead Rood, 12 Ottawa Road, Arlington, Mass.; No. 489, J. F. Simon, 2110 Robert St., New Orleans, La.; No. 490, John B. Tripenny, 241 S. Center St., Casper, Wyo.; No. 491, Chas. E. Vanderkleed, 200 Harvard Ave., Collingswood, N. J.; No. 492, Eli Witt, c/o Eli Witt Cigar Co., Tampa, Fla.; No. 493, Clarence Allison Morrell, Elgin Bldg., Ottawa, Ont., Can.; No. 494, C. J. Zufall, 617 Waldron St., W. Lafayette, Ind.

The meeting then adjourned.

THIRD MEETING OF THE COUNCIL.

The Third Meeting of the Council for 1930–1931 was held at the Hotel Columbus, Miami, Fla., on Thursday, July 30, 1931, beginning at 9:30 A.M. The following members were present: Hilton, Christensen, Beal, Arny, Bradley, Day, Adams, Eberle, Jordan, DuMez and Kelly.

137. National Formulary and Supplements. In response to a previous request by the Council, Dr. J. H. Beal submitted the following amendment to the By-Laws of the ASSOCIATION:

"That there be added to Chapter VIII of the By-Laws a new article as follows: Article IX. *Committee on Recipe Book.* The Committee on Recipe Book shall consist of twenty-five members elected by the Council. It shall be the duty of the committee to prepare revisions of the Recipe Book from time to time as the same are deemed necessary by the Council.

"And that present Articles IX, X and XI be numbered Articles X, XI and XII."

On motion of Bradley, seconded by Christensen and carried, the amendment was approved and referred to the Second General Session of the ASSOCIATION.

138. Committee on Pharmaceutical Research. Chairman Arny read the following report:

"Your Committee transacted business during the year by means of form bulletins. It also held a meeting at Miami on July 27th which was attended by eight of our fourteen members.

"It will be recalled that at our 1930 meeting the ASSOCIATION authorized the expenditure of the 1930 grant (or grants) from the American Pharmaceutical Research Fund, totalling $775.00, for research problems relating to the National Formulary revision. There still remained an unexpired grant of $375.00 appropriated in 1926 for purpose of N. F. revision; hence your Committee had, at its disposal a total of $1150, devoted to National Formulary research; such money to be awarded upon the recommendation of the chairman of the National Formulary Revision Committee and the chairman of our Research Committee; subject to vote of approval of the entire Research Committee.

"Under this procedure, the following grants were made during 1930–1931:

To H. A. Langenhan and Earl Guth of the School of Pharmacy of the University of Washington for study on drug extraction problems..... $500.00

To Glenn L. Jenkins and Donald C. Grove of the University of Maryland, for study of the chemical tests of the National Formulary..... $300.00

To Bernard Fantus and Edgar B. Carter of Chicago for research on the development of tests on the solubility of ampul glass..... $350.00

"By mail ballot formally ratified at our meeting of July 27th, it was decided that the grant (or grants) for 1931–1932 for which $1100.00 is available, be devoted to National Formulary and Committee on Unofficial Standards research.

"Already three applications for grants have been presented to the Committee, one of these was not accepted since it did not fall within the scope of the research activity outlined above. Two others, both on the subject of drug extraction, were given careful attention at our meeting of July 27th and it was decided that this subject was of such far-reaching importance that the work should be conducted upon more comprehensive lines than the finances of the AMERICAN PHARMACEUTICAL ASSOCIATION Research Fund will permit at this time. Your Committee therefore requests further time to arrange plans for this research (*a*) as to choice of the investigators selected to carry out the work; (*b*) as to making proper fiscal arrangements to secure for the project funds adequate to finance this important undertaking.

"In conclusion, your Chairman begs to point out that three vacancies occur in the committee at the present time. Mr. J. C. Peacock is now out of active research work and asks that he be permitted to resign. The election of his successor to serve until 1934 is in order. In addition, the terms of Heber W. Youngken and E. N. Gathercoal expire this year."

It was moved by Beal, seconded by Adams, that the report be received and approved. After a general discussion of the report and of the extensive research study of drug extraction proposed therein, the motion was carried.

139. Committee on Year Book. Before reading the report, Chairman Geo. D. Beal explained that this was not to be considered as a final report.

"The Committee on YEAR BOOK respectfully submits the following report:

"During the year informal discussions have been held at convenient times, and finally Editor DuMez's report of last year was communicated to the members through the medium of a bulletin. Since arriving in Miami frequent conferences have been held, forming the basis for this report.

"The members of the Committee are unanimous in commending the splendid work of Dr. DuMez and his predecessors who have established and maintained a high standard of thoroughness and accuracy for the Report on the Progress of Pharmacy, and of the abstractors who have given unselfishly of their time in the preparation of the text.

"Dr. DuMez said to the Council last year: 'A complete review of the literature under our present system of abstracting is now impossible owing to the many new publications which have come into existence since the war, and to the enormous increase in material published in the fields of chemotherapy, glandular therapy, pharmacology, etc. I would also bring to your notice the fact that there are now being published in this country several abstract journals, notably *Chemical Abstracts* and *Biological Abstracts*, which cover certain fields now covered by the YEAR BOOK much more thoroughly than we can ever expect to, and these have added advantage that they are issued monthly, and in one case semi-monthly.'

"As a comment, and with no thought of criticism, your Committee believes that regardless of the speed with which our own abstractors may work, our system of publication makes it inevitable that a goodly number of the articles reviewed will be at least a year and a half old before our abstracts appear. As a record of research for perusal in years to come, the volumes of the YEAR BOOK are a valuable part of any library; as a current report on the progress of pharmacy, we may fairly doubt whether the abstracts are serving their purpose.

"The librarian of one of our largest manufacturers has written as follows: 'I feel that the publication represents an immense duplication of effort. Our use of the YEAR BOOK is almost entirely restricted to the period before the publication of *Chemical Abstracts*. The extended period over which the YEAR BOOK has been published and its cumulative indexes make it valuable in searching for old material on pharmaceutical subjects during the period when no other comprehensive abstracts of such American (?) literature were appearing. For the most of the time since 1907, the same field has been more thoroughly covered in the various sections of *Chemical Abstracts*. In making a literature search, *Chemical Abstracts* is now preferable, even though the abstracts are somewhat briefer.

" 'For current use, the YEAR BOOK is practically useless on account of the delay in publication. The disadvantage of the other abstract sources, *e. g.*, *Chemical Abstracts* and *Biological Abstracts* is the amount of extraneous material necessarily read in covering the current numbers as published.'

"Speaking in defense of our present abstracts, the Committee would point out that they are as a rule much more complete in their presentation than the other publications named. They also assemble in one volume the literature of pharmacy, that might otherwise need to be drawn in part from each of the other journals. Many of our members do not have access to well-equipped libraries where the journals of the world are to be found, so that the more or less 'index' form of *Chemical Abstracts*, by virtue of lack of detail, will be of less service than the fuller abstracts of the YEAR BOOK. Finally, many of our members do not have the facility in the use of foreign languages that will make the periodicals of the world of use to them, but must rely on such abstracts in English as they may find available.

"Your Committee does not feel qualified to make a final report at this time, and therefore begs to be continued for another year to complete its survey and to formulate recommendations. It does, however, wish to offer the following thoughts for your consideration.

"1. The publication of abstracts in the present YEAR BOOK does not comprise a current report on the progress of pharmacy, and is not as useful to research workers as the other abstract, publications previously mentioned.

"2. To be of real value, the abstracts pertaining to pharmacy from current literature should be published monthly in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

"3. It is believed that the abandonment of the YEAR BOOK would to a large measure offset the added cost of the JOURNAL.

"4. It is believed that the other matter that appears in the YEAR BOOK might, if necessary, be published in pamphlet form at longer intervals and sold to members and others on its merits as a directory of the ASSOCIATION.

"5. It is believed that it is unnecessary for the abstracts to cover the same wide scope that is covered at present, for much of the duplication of the other abstract journals seems to be unnecessary. The abstracts should have a more immediate bearing on the branches of pharmacy, and the articles to be abstracted should be carefully selected by the Editor or by associate editors to be provided. The bibliography of research that is now a feature of the JOURNAL could be continued as a part of the abstract section, presenting a working bibliography of which only a part would be in abstract form. The Committee feels that an average of twenty-four JOURNAL pages per month could for the present be devoted to the publication of abstracts.

"6. Believing that the monthly publication of abstracts in the JOURNAL is the best means of reporting the progress of pharmacy, and would react to the benefit of the ASSOCIATION by increasing the popularity of the JOURNAL, the Committee has a suggestion to make if it is felt that the publication of the YEAR BOOK should be continued. There is a place in pharmaceutical literature for an Annual Report similar to that of the Chemical Society of London or the Annual Report on Progress in American Chemistry published by the National Research Council. These volumes consist of a series of chapters, or essays, in which progress in each

branch is reviewed, are each produced by a specialist in the field, and are profusely supplied with literary references. Of the latter volume it may be said that the number for 1930 comprises 629 pages of which 593 are actual text, and is divided into 40 chapters. It is the Committee's feeling that such a volume could not take the place of the abstract section suggested for the JOURNAL, but should be sold separately, possibly at a reduced rate to ASSOCIATION members. If this type of YEAR BOOK should be established it might be possible to use the reports of the several research committees of the National Conference on Pharmaceutical Research. These reports, amplified and carefully prepared, would serve nicely for a complete annual review of pharmacy.

"7. The Committee is fully cognizant of the fact that the Editor of the JOURNAL cannot be expected to assume the heavy load of preparing the abstract section monthly, and therefore takes the liberty of suggesting a salaried associate or assistant editor, whose especial responsibility would be the abstract section and who therefore should be a specialist in bibliochresis. This associate would, it is believed, be able to lift some of the burden of the JOURNAL proper from the shoulders of the Editor through performance of some of the routine tasks, while at the same time directing, and to a large measure preparing, the abstracts of scientific literature.

"Conclusion—The Committee has received several suggestions regarding a scientific journal of Pharmacy. This subject not having been referred to the Committee, it is only mentioned here as a matter of record.

"In asking to be continued, the Committee hopes that its report will be given full publicity in the JOURNAL, and that members of the ASSOCIATION generally will be free with their comments and suggestions. These may be addressed to any member of the Committee, to the Editors of the JOURNAL or the YEAR BOOK, or to the Secretary of the ASSOCIATION.

"The Committee wishes to report that it has received the following resolution from the Plant Science Seminar which will have its consideration: '*Resolved*, that it is the concensus of opinion of the members in attendance at the 1931 meeting of the Plant Science Seminar, that abstracts of scientific papers representative of all phases of Pharmacy be printed, as they become available in current issues of the JOURNAL OF A. PH. A. and *Resolved*, that a copy of this Resolution be sent to the Committee on YEAR BOOK of A. PH. A.' "

It was moved by DuMez that the report be received and approved, and the Committee be continued. The motion was seconded by Adams and carried.

140. Committee on National Formulary. The following report was read by Chairman Gathercoal:

"The Committee on National Formulary has maintained a high degree of activity since the Cleveland meeting of the Committee in 1930.

"Bulletins and Subcommittee Letters have been issued from the Chairman's office to the extent of 300 pages during the year. These are distributed in whole or in part, to about 66 persons, including members, auxiliary members and coöperators on the revision work.

"The Committee met for a two-day conference at Pocono Manor Inn, June 29 and 30, 1931, and accomplished much in the four sessions held on these two days. In addition to the sessions held by the entire Committee, each Subcommittee held one or two meetings and markedly advanced the Subcommittee work. All the fifteen members of the Committee were present and also Associate Member Cook, Chairman Krantz of the Committee on Unofficial Standards and Secretary Kelly of the A. PH. A.

"The work of the Committee during the past year may be described along five general lines, each of which will be presented under an appropriate heading, as follows:

Conduction of Research Investigations
The Establishment of Foundational Principles of Revision
The Preparation of Statistical Tabulations
Admissions into N. F. VI
The Study of Individual Monographs."

CONDUCTION OF RESEARCH INVESTIGATIONS.

"The conduction of research investigations of important problems in connection with National Formulary preparations, and supported in part by grants from the N. F. Research Fund, is an outstanding feature of the work of the Committee during the past year.

"Dr. Scoville early proposed a study of the scientific foundations upon which rest certain empirical practices in extractive operations. This study has been carried on at the University of Washington College of Pharmacy under the direction of Dr. Langenhan. It was suggested at the Committee Conference this year that Dr. Scoville should engage a suitable assistant and continue the work in his own laboratory during the coming year.

"Dr. Fantus has proposed and is guiding a study of certain phases of ampul preparation, in anticipation of the admission of an increased number of ampuls to N. F. VI.

"Dr. Langenhan is supervising an extensive study of the U. S. P. and N. F. Liquors. He, no doubt, will give similar consideration to other important groups of preparations under consideration by his Subcommittees.

"Dr. Jenkins is guiding a study of chemical tests and assays as applied to N. F. chemicals.

"Mr. Becker, Professor Bachman and the auxiliary worker, Miss Laurine Jack, at the University of Minnesota College of Pharmacy, have made important studies on the N. F. pills.

"Dr. J. J. Durrett of the U. S. Food and Drug Administration has originated an extensive critical review of the titles and synonyms in Part I of the National Formulary. Dr. Arny has applied these criticisms to a study of the N. F. Nomenclature.

"Other members, including the Auxiliary Subcommittees on Dental Preparations and on Veterinary Preparations have also been active."

THE ESTABLISHMENT OF PRINCIPLES OF REVISION.

"The establishment of principles of revision is an important phase of the Committee work. Mention might be made of the following actions taken by the Committee during the past year.

"'(1) We have undertaken a revision and completion of the General Principles of Revision with the understanding that these will be published in full in the Preface of N. F. VI.

"'One important modification of Gen. Prin. No. 1 on Scope has been made, by which simple medicinal materials will be admitted to N. F. VI on the basis of extensive use, even if they are not employed in any National Formulary preparation.

"'(2) A complete set of General Notices adopted from the U. S. P. General Notices but adapted to the National Formulary will probably be included in full at the beginning of the text of N. F. VI. No extensive changes nor modifications of the General Notices of U. S. P. XI are contemplated.

"'(3) The very extensive, accurate and complete descriptions of General Tests, Processes and Apparatus as found in the back part of the U. S. Pharmacopœia will not be copied into N. F. VI, but reference to the U. S. P. text will be made in the N. F. monographs where desired. This action was taken not only to save space in the National Formulary and unnecessary duplication of printing, but particularly to avoid any possibility of differences or deviations in the official methods for these tests, reagents, processes, etc.

"'(4) The N. F. Subcommittees dealing with Crude Drugs and with Chemicals have adopted a fairly uniform style of monograph so that the monographs of Part II of N. F. VI will possess a very desirable degree of uniformity.'"

THE PREPARATION OF STATISTICAL TABULATIONS.

"The preparation of statistical tabulations on the extent of use in the pharmacies of the United States of N. F. V preparations and of new preparations proposed for inclusion in N. F. VI, has been an important part of the Chairman's activities during the year past.

"We have completed and published the survey on the extent of use of the 570 N. F. V galenicals. Reports were received from 76 hospital pharmacists, 213 prescription drug stores and 625 ordinary drug stores throughout the United States. Especial credit should be given to Editor Mayes and the American Druggist for the distribution of questionnaires among retail drug stores of the United States and the tabulation of the data received from 625 of them.

"The reports indicated a 'large,' 'medium,' 'small' or 'no' use. The tabulated data included more than 400,000 items. The results were finally read in 'percentage of use,' and nearly all of the items so far admitted to N. F. VI are used in 20 per cent or more of the pharmacies of the United States. Based on an estimate of 60,000 such pharmacies, a preparation to be admitted to the National Formulary must be used in at least 12,000 pharmacies in the United States.

"A similar survey on 437 unofficial preparations proposed for inclusion in N. F. VI is now in process. A preliminary report of this survey was presented at the 1931 conference of the Committee.

"*A Prescription Count* was instituted more than a year ago in a suburb of Chicago. All of the prescriptions in the 12 drug stores of this suburb that were filled during the year 1929 were counted, both refills, new regular and narcotic. The number of prescriptions filled during the year averaged about 2.75 per person in the suburb.

"A similar count was made in Rockford, Ill., a city of nearly 100,000 population. Here the number averaged about 2.95 per person per year.

"Then Dr. R. L. Swain of Baltimore undertook a similar count for the entire state of Maryland. He finds the average annual prescription fill for the 650 odd stores of Maryland to exceed 5000 prescriptions per store and for the city of Baltimore to be almost exactly 3.0 per person per year. However, in the whole State the average is but slightly above 2 per person per year.

"Based on these figures the total of prescriptions filled annually in the drug stores of the United States would approach 300,000,000.

"*Survey of Prescription Ingredients* with the number of occurrences of each ingredient per definite number of prescriptions have been made on a number of occasions at least as far back as the 1880's.

"Such a survey, made by Hallberg and Snow in 1898, covered 117,000 prescriptions from 28 states. The compilation of the data was splendidly done, but unfortunately has never been published.

"A similar survey of national character is recorded in the Charter's Report in 1925. This survey covered but 17,500 prescriptions but these were gathered from over the country and were read until practically no new items occurred in a block of 500 prescriptions.

"Professor Cook, Chairman of the U. S. P. Revision Committee, undertook a survey in 1929–30 of those items only that had been deleted from U. S. P. VIII and U. S. P. IX. This survey represents 237,000 prescriptions from about 500 stores throughout the nation and covers about 400 items.

"The results from each of these surveys have been studied and careful comparisons made. This information has been used in considering admission to the National Formulary. However, certain discrepancies brought out by these comparisons have led to a plan for yet another survey even more extensive and comprehensive, and that should give a true picture of the usage of medicines in prescriptions in the United States. Such a survey is now under way and is being financed jointly by the Board of Trustees of the U. S. Pharmacopœia and the Council of the AMERICAN PHARMACEUTICAL ASSOCIATION.

"*A Survey of the Use of Medicines in Hospitals* should be made. Such a survey presents many difficulties, for in most hospitals no record is kept of the amount of medicines dispensed in the hospital. Some hospitals have dispensaries where regular prescription files are kept, others have files of 'orders,' but in most hospitals no record is kept of the medicine used by the nurses. However, it has been estimated that perhaps one-fourth of all the medicine ordered by physicians in the United States is dispensed in hospitals.

"The amount and kind of *medicines dispensed* by *physicians*, also, is not known. Prof. Cook has made a study of the formulas in the catalogues or price lists of physician-supply houses and finds that about 85% of the items in these formulas are U. S. P. items.

"Finally, no figures are available on the use of *medicines in 'patent' medicines*. Certainly the amount used here must be very large.

"A tabulation of the *imports* of *crude drugs*, *medicinal chemicals* and *medicines* might throw much light on the extent of use of certain items of medicine."

ADMISSIONS INTO N. F. VI.

"The admissions into N. F. VI, as with the Pharmacopœia, require a vast amount of study.

"There are three sources of admission to National Formulary VI, *viz.:* the items of N. F. V, the deleted items from U. S. P. X, and new or unofficial items.

"The Committee, early in its work, decided to base admissions on extent of use, and

determined to find out, if possible, just how much each preparation was used by physician, pharmacist or layman before it was passed upon for admission to N. F. VI.

"The titles in Part I of N. F. V have been considered at both of the annual conferences of the Committee and about 350 of them have been definitely admitted to N. F. VI. About 30 titles are still under consideration and about 200 are tentatively in the deleted group.

"The items of Part II rather automatically follow those in Part I: if the preparation in Part I is admitted, the drug or chemical in Part II is also admitted. In this way, 130 of the 213 items in Part II are admitted and 10 are still under consideration.

"About 40 preparations of U. S. P. X have been deleted by the U. S. P. Committee on Scope, and most of these, no doubt, will find their way into the N. F.

"Several hundred new preparations have been proposed for admission to N. F. VI. These are being studied as to their extent of use and perhaps a considerable number will be admitted to N. F. VI. The Committee has already taken favorable action on the admission of ampuls in increased number and is considering adding more tablets. Several good elixirs and ointments have been proposed, as well as a wide range of other preparations.

"When the deletions are definitely passed upon, the list will be extensively published and comments and criticisms will be invited."

THE STUDY OF INDIVIDUAL MONOGRAPHS.

"The Subcommittees have been giving much thought to the individual monographs, but no actual copy of a revised monograph has appeared during the year in any of the Subcommittee Letters. However, according to the reports of the Subcommittees made at the last Conference, several of the Subcommittees are now prepared to issue the revised copy of a considerable number of monographs, and it is expected that these will appear in the Subcommittee Letters within the next month or so."

THE FINANCIAL SIDE.

"The Committee appreciates the liberal policy of the Council as regards Committee expenditures during the past year. The cost of the Extent of Use Surveys has been considerable, perhaps as much as $600.00. The office expenses have been kept at a low figure because the University of Illinois School of Pharmacy has largely contributed the stenographic expense as well as the office space. The cost of the 1931 Committee Conference has been kept well within the appropriation and will probably not exceed $1100.00.

"The estimated expenses for the coming year may be summarized as follows:

'An appropriation of $500.00 has already been made by the Council to apply on the Prescription Ingredient Survey. We will endeavor to keep within this appropriation. No other extensive surveys are contemplated during this revision.

'No Conference of the Committee is contemplated during 1932. However, we may ask for a third Conference before the revised text actually goes to the printer.

'The office expenses during the coming year will probably be considerably heavier than last year, because of a large increase in the Committee Bulletin and Subcommittee Letters, due to monograph work which occupies much space.' "

It was moved by Arny that the report be received and published. The motion was seconded by DuMez and carried.

141. Spanish Translation of the National Formulary. The secretary called attention to the interest of the Pharmaceutical Association of Porto Rico in a Spanish translation of the National Formulary for distribution in Porto Rico and the other South American countries. The ASSOCIATION has proffered its services in this connection and the Faculty of the School of Pharmacy of the University of Porto Rico has offered to make the translation. The president of the Association is investigating the probable distribution of the Spanish translation. Dr. Velez, Dean of the School of Pharmacy, was introduced and assured the Council of the coöperation of pharmacists of South America in preparing such a translation.

After a general discussion of the proposal, it was moved by Beal that the Committee on Publications be requested to make a special study of the advisability and feasibility of making a Spanish translation of the next edition of the National Formulary. The motion was seconded by Adams and carried.

142. Committee on Recipe Book. It was moved by Beal that an amendment to the By-Laws of the ASSOCIATION be submitted to the Second General Session making this Committee a Council committee. The motion was seconded by Arny and carried.

143. International Pharmaceutical Federation. Dr. E. F. Cook brought to the attention of the Council the proposal to invite the Federation to meet in or near Chicago at the time of the Scientific Exposition to be held in that city in 1933—and closely preceding or following the annual meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION. The subject was fully discussed and it was moved by Christensen that the proposed invitation be approved and that a suitable resolution be presented to the House of Delegates. The motion was seconded by Bradley and carried.

144. Election of Members. The following applicants were elected to membership on account of the payment of dues, on motion of Bradley, seconded by Arny and carried:

No. 495, Chas. M. Brewer, 1437 W. 29th St., Oklahoma City, Okla.; No. 496, John Joseph Buzzett, Apalachicola, Fla.; No. 497, C. F. Miles, Buffalo, Okla.; No. 498, Eugene P. Purcell, Grand Central Ave., Tampa, Fla.; No. 499, Fayetta H. Philip, 2714 Piedmont Ave., Berkeley, Calif.; No. 500, W. D. Wilcox, 600 S. Washington Square, Philadelphia, Pa.

The Third Meeting of the Council then adjourned.

FOURTH MEETING OF THE COUNCIL.

The Fourth Meeting of the Council was held on Friday, July 31, 1931, beginning at 10:45 P.M. with the following members present: Hilton, Christensen, Arny, Bradley, Day, Adams, Johnson, Eberle, DuMez and Kelly.

The minutes of the Third Meeting were approved as read, on motion of Arny, seconded by Adams and carried.

145. Joint Meeting Executive Committee N. A. R. D. and Council of the A. Ph. A. The chairman reported that the annual joint meeting of these bodies was held on Tuesday afternoon, July 28, 1931, and that a splendid spirit of coöperation was shown. The work of the Committees on Pharmacy Week, the legislation to improve the pharmaceutical service in the U. S. Army and joint use of a booth at the Northwest Drug Show were considered.

146. Report from the Pharmacy Committee of the Chicago World's Fair of 1933. Mr. Christensen read the following report as prepared by Secretary E. N. Gathercoal of the Committee:

"President Christensen of the AMERICAN PHARMACEUTICAL ASSOCIATION issued a call in the name of the ASSOCIATION in November 1930 for a meeting of delegates from each of our great national pharmaceutical organizations at Washington in December 1930 for the formation of a committee to develop a pharmacy exhibit at the Chicago World's Fair of 1933.

"This meeting of delegates was held and the World's Fair Pharmacy Committee was organized with the following officers and committees:

H. C. Christensen, Chairman
A. S. Burdick, Vice-Chairman
E. N. Gathercoal, Secretary
J. H. Riemenschneider, Treasurer
Ray A. Whidden, Chairman, Subcommittee on Plans
Wm. B. Day, Chairman, Subcommittee on Finance
Edward H. Kraus, Chairman, Subcommittee on Foreign Exhibits
E. Fullerton Cook, Chairman, Subcommittee on International Pharmaceutical Federation
J. H. Beal, Chairman, Subcommittee on Rules

"The Chicago members of the Committee have held a number of meetings and have secured locally some funds for organization expenses. Many contacts have been made with the officials of the World's Fair and a very hearty coöperation has been received from them.

"The pharmacy exhibit will be placed in the Temple of Health along with those of medicine, dentistry, sanitation, hospitals, etc. This building, 400 x 700 ft. in size and now under construction, will have one of its floors devoted exclusively to these public health exhibits and the other floor to pure science exhibits.

"The World's Fair has provided a scientific director for the whole public health group of exhibits and has engaged a man to sell the rental space for all the commercial exhibits in the

building. This arrangement relieves the Pharmacy Committee of heavy duties and much expense.

"Much preliminary work is already done: the International Pharmaceutical Federation is highly approved in Europe; the Plans Subcommittee will become active this Fall; the Foreign Exhibits Subcommittee will coöperate with the Plans Subcommittee; the actual organization and preparation of exhibits will begin early in 1932 and the gathering and installation of exhibits early in 1933.

"The Finance Subcommittee desires to meet the preliminary expenses by contributions from the organizations whose delegates constitute the World's Fair Committee, so that a general campaign for funds will not be needed until the winter of 1932–1933 when the heavy and expensive work of the Committee begins.

"There seems to be no doubt but that the World's Fair in Chicago in 1933 is an assured project and on a scale and magnificence never before equalled. Pharmacy has a splendid opportunity to prove her professional standing and her great usefulness in public health service by showing her scientific contributions to the health of the world during the past century."

On motion of Bradley seconded by Johnson and carried, the report was received and referred to the Committee on Finance for consideration when the budget for 1932 is prepared.

There being no further business, the chairman declared the Council for 1930–1931 adjourned.

E. F. KELLY, *Secretary.*

THE COUNCIL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 1931–1932.

Office of the Secretary, 10 West Chase Street, Baltimore, Md.

LETTER NO. 1.

August 6, 1931.

To the Members of the Council:

The reorganization and first meeting of the Council 1931–1932 was held in the Hotel Columbus, Miami, Fla., on Friday, July 31, 1931, beginning at 10:45 P.M.

1. The roll was called and the following were present: Arny, Bradley, Day, Hilton, Hunsberger, Adams, Roach, Kelly, Eberle, DuMez and Beard.

2. Election of Chairman. S. L. Hilton was elected Chairman of the Council for 1931–1932 on motion of Arny seconded by Adams and carried.

3. Election of Vice-Chairman. C. H. LaWall was elected Vice-Chairman of the Council for 1931–1932 on motion of Arny, seconded by Day, and carried.

4. Election Editor of the Journal. E. G. Eberle was elected Editor of the JOURNAL for 1931–1932 on motion of Adams, seconded by Hunsberger, and carried.

5. Election of Editor of the Year Book. A. G. DuMez was elected Editor of the YEAR BOOK for 1931–1932 on motion of Eberle, seconded by Beard and carried.

6. Membership of the Council. The membership and officers of the Council for 1931–1932 are as follows:

ELECTED MEMBERS.

J. H. Beal, Camp Walton, Fla. (Term expires 1932.)
C. E. Caspari, Euclid & Parkview Aves., St. Louis, Mo. (Term expires 1932.)
C. H. LaWall, 214 S. 12th St., Philadelphia, Pa. (Term expires 1932.)
H. V. Arny, 115 W. 68th St., New York, N. Y. (Term expires 1933.)
T. J. Bradley, 179 Longwood Ave., Boston, Mass. (Term expires 1933.)
W. B. Day, 715 S. Wood St., Chicago, Ill. (Term expires 1933.)
H. A. B. Dunning, Charles & Chase Sts., Baltimore, Md. (Term expires 1934.)
S. L. Hilton, 1033 Twenty-second St., N. W., Washington, D. C. (Term expires 1934.)
Ambrose Hunsberger, 1600 Spruce St., Philadelphia, Pa. (Term expires 1934.)

EX-OFFICIO MEMBERS.

Walter D. Adams, Forney, Texas
J. G. Beard, Chapel Hill, N. C.
J. W. Dargavel, 4000 Minnehaha Ave., Minneapolis, Minn.

E. F. Kelly, 10 West Chase St., Baltimore, Md.
C. W. Holton, Box 81, Essex Fells, N. J.
Thomas Roach, 110 W. Main St., Oklahoma City, Okla.
E. G. Eberle, 10 W. Chase St., Baltimore, Md.
A. G. DuMez, Lombard & Greene Sts., Baltimore, Md.

OFFICERS OF THE COUNCIL.

S. L. Hilton, Chairman.
C. H. LaWall, Vice-Chairman.
E. F. Kelly, Secretary.

7. Finance Committee. Chairman Hilton appointed T. J. Bradley, Chairman, C. H. LaWall and C. W. Holton as members of the Committee on Finance and these appointments are confirmed on motion of Adams, seconded by Hunsberger and carried.

8. Committee on Property and Funds. The personnel of this Committee, as provided for in the Council By-Laws, is as follows for 1931–1932: W. D. Adams, C. W. Holton, S. L. Hilton, T. J. Bradley and E. F. Kelly.

9. Committee on Publications. Chairman Hilton appointed H. V. Arny, C. H. LaWall and W. B. Day as members of the Committee, the other members being E. G. Eberle, E. F. Kelly, A. G. DuMez and C. W. Holton as provided in the By-Laws.

These appointments were confirmed on motion of Beard seconded by Roach. Chairman Hilton appointed A. G. DuMez as chairman of the Committee on Publications.

10. Committee on Standard Program. The chairman appointed S. L. Hilton, T. J. Bradley and E. F. Kelly as members of the Committee on Standard Program.

11. Committee to Confer with A. A. C. P. in Reference to Student Branches of the A. Ph. A. Chairman Hilton appointed W. Bruce Philip, Chairman, H. V. Arny and R. L. Swain as the members of this Committee.

12. Committee on Year Book. The chairman announced that this committee had been continued by action of the Council 1930–1931 with the following membership: Geo. D. Beal, Chairman, F. W. Nitardy, H. W. Youngken, E. N. Gathercoal, E. E. Swanson, W. L. McCloskey and J. C. Krantz, Jr.

13. Executive Committee of the Council. It was moved by Arny that the chairman be authorized in case the occasion should arise, to appoint an Executive Committee consisting of seven members. The motion was seconded by Day and carried.

14. Committee on Pharmaceutical Research. On motion of Arny, seconded by Beard and carried, H. W. Youngken and J. C. Munch were elected members of this Committee to serve until 1936, and W. J. Husa was elected to fill the unexpired term of J. C. Peacock, resigned, ending in 1934.

15. Commission on Proprietary Medicines. W. B. Day was elected a member of this Commission to serve until 1936, on motion of Bradley, seconded by Arny and carried.

16. Committee on Unofficial Standards. On motion of Day, seconded by Arny and carried, E. N. Gathercoal, C. M. Sterling, J. A. Koch and E. B. Fischer were elected members of the committee for a term of four years.

17. Appointment of Standing and Special Committees and Delegates of the Association. The president was authorized, on motion of Day seconded by Roach and carried, to make such appointments, as are now authorized, to fill vacancies as they may occur and to make additional appointments as may be necessary or advisable, during the year.

18. Committee on Recipe Book. The secretary announced that the amendment to the By-Laws of the ASSOCIATION had been adopted providing that the members of this Committee were to be elected by the Council. After a general discussion, it was moved by Arny that the Committee on RECIPE BOOK be continued for one year. The motion was seconded by Day and carried.

19. Contact Man. A resolution adopted by the ASSOCIATION and providing "That the Council is urged to give study to the appointment of a contact man whenever and however it considers it practical and feasible" was read and discussed. It was moved by Roach that the proposal be given further consideration until the next meeting of the Council. The motion was seconded by Bradley and carried.

20. Journal and Year Book. The resolutions adopted by the ASSOCIATION and urging that the Committee on Publications and the Committee on YEAR BOOK consider certain suggested changes in the JOURNAL and the YEAR BOOK were read and after discussion were referred to the respective committees on motion of Hunsberger seconded by Adams and carried.

The meeting then adjourned.

E. F. KELLY, *Secretary.*

UNITED STATES PHARMACOPŒIA AND NATIONAL FORMULARY AS STANDARD UNDER THE PURE FOOD AND DRUGS ACT.*

BY DR. J. J. DURRETT.[1]

Mr. President, Ladies and Gentlemen:

The Food and Drug Administration handles the enforcement of the Food and Drugs Act, together with other regulatory acts. The Administration is very much pleased to have this opportunity of talking with you about matters that are of great mutual importance under the Food and Drugs Act.

The Food and Drugs Act was placed upon the statute books 25 years ago. This law was enacted for one purpose, and this purpose is very simple and easy to understand. It is just this: Those who manufacture and merchandise foods and drugs shall not deceive those who consume foods and drugs. From the standpoint of general principles, this is the entire aim of the act.

Those who have had the responsibility of enforcement of the Food and Drugs Act have received a great deal of criticism because of their activities. I am told that in the early days of enforcement of the act, there were differences of opinion as to methods of enforcement, and these undoubtedly arose for the simple reason that enforcing officials did not have behind them at that time court decisions on which to base their enforcement policy. At the present time, however, more than 18,000 court decisions have been written dealing with the Food and Drugs Act, and we have at hand court opinions relative to most of the important details with which the law deals. We do not follow what we think are the requirements of the law, but what the courts have said the law is.

In the press at various times there have appeared sweeping criticisms of our enforcement activities. I think that it will be interesting and helpful to note what the Supreme Court of the United States has said in its most recent decision (1923) under the Act, and then consider some of the outstanding criticisms that have been made.

"The statute is plain and direct. Its comprehensive terms condemn every statement, design and device which may mislead or deceive. Deception may result from the use of statements not technically false or which may be literally true. The aim of the statute is to prevent that resulting from indirection and ambiguity as well as from statements which are false. It is not difficult to choose statements, designs and devices which will not deceive. Those which are ambiguous and liable to mislead should be read favorably to the accomplishment of the purpose of the Act." (From opinion of the Supreme Court of the United States, in United States *vs.* 95 Barrels, *et al.*, No. 559, October Term, 1923.)

This decision simply says that if there is any untruthful or misleading statement made about the ingredients contained in a food or drug by the manufacturers or distributors of this food or drug, the enforcement officials are to interpret this as a violation of the Act. It clearly says also that statements are to be construed in the interest of the public. With such a clear-cut decision, enforcement officials feel that they have a mandate from the Supreme Court to proceed to protect the public in respect to those matters dealt with under the Food and Drugs Act, and until the Supreme Court modifies this mandate, enforcement will follow along the lines very much as they are proceeding to-day.

Recently, in the District Court of Connecticut, we tried a case which involved the seizure of a certain preparation, "Lee's Save-the-Baby." This article was composed principally of lard, turpentine, camphor and small proportions of other volatile flavoring oils. The preparation in its labeling said that this article was "Lee's Save-the-Baby," and the diseases referred to in the label-

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* Address before First General Session, A. PH. A., July 29th.

[1] U. S. Food and Drug Administration.

ing included, among others, croup, influenza and pneumonia. Any interpretation of such labeling would lead to the conclusion that the article would save the baby from croup, influenza or pneumonia. The Government's contention was that this article would not do this and that the manufacturer knew that it was incapable of saving babies from these diseases. We therefore charged that the statement was, under the Sherley Amendment to the Food and Drugs Act, false and fraudulent. The District Court decided that this branding was not false and fraudulent. This decision has not changed the Administration's opinion relative to this labeling. We still believe that the manufacturer knows that this article will not save babies from pneumonia or other diseases mentioned, and that therefore the Food and Drugs Act is violated when the article is shipped in interstate commerce.

Now, since this decision was rendered in Connecticut another case involving the same section of the Act has been decided in Louisiana in favor of the Government. This suit involved the labeling of four preparations instead of one. Very little has been said about this suit in the press, for the simple reason that the decision was not at variance from the established policy of the Food and Drug Administration.

We have been repeatedly asked if we intend to change our policy to conform to the District Court's decision in Connecticut. Our reply is that we have no notion of making any change in our enforcement policy because of a District Court's decision. These two courts have equal weight and are final for their respective jurisdictions, but they have no force outside of their jurisdictions. It is the purpose of the Administration to appeal the adverse decision to the Circuit Court and eventually to the Supreme Court. Any decision rendered by the Supreme Court in connection with the questions involved will be followed by the Administration.

We are aware also of the great amount of criticism of the Administration because of multiple seizure. For your information I wish to say that since 1924 we have seized 1 preparation 7 times; 1 preparation 8 times; 1 preparation 9 times; 4 preparations 10 times; 2 preparations 11 times; 2 preparations 13 times; 1 preparation 15 times; 1 preparation 16 times; 1 preparation 19 times; and 1 preparation 32 times. This is about 2 preparations per year which have been subjected to 7 or more seizures. When you recall that we have had approximately 18,000 cases under the Food and Drugs Act, this number of articles subjected to 7 or more seizures since 1924 certainly is not very great. These 15 preparations constitute the multiple seizures which were made because of adulteration, misbranding or both adulteration and misbranding. Recently a case was tried in the Federal Court of the District of Columbia where the manufacturer of the goods seized questioned our right to seize his preparation wherever it was found in interstate commerce until a court decision had determined whether or not the article was misbranded or adulterated. In the District Court the decision was in favor of the Government. In the Appellate Court, much to our surprise, the judgment sustained the contention of the manufacturer. Efforts have already been made to appeal this decision to the Supreme Court for review. In substance, the decision of the Appellate Court was that the Department of Agriculture had no right to seize multiple drugs found in interstate commerce until after the manufacturer had had an opportunity to try the issues involved. It clearly implied that if an article was in violation of the terms of the Food and Drugs Act, then the Department of Agriculture had the right to seize the multiple article. This decision is exactly in line with the activities of the Administration in the past, as you can see from the small number of drug articles seized 7 or more times during the last 6 years. However, the court did not have before it the facts relative to the labeling of the article involved in the decision in the Appellate Court in Washington, and the Administration is decidedly of the opinion that the article was misbranded and adulterated, and that any consideration of this branding on its merits would settle this question in favor of the Government's contention, as in fact the claimant actually admitted in the District Court of Baltimore and various other jurisdictions, where he consented to a judgment and destruction of the goods. If this article was not both misbranded and adulterated, and subject to seizure wherever it was found in interstate commerce, no article on the American market to-day can be properly regarded as subject to multiple seizure.

There has been a great deal of criticism of me personally, and also of the Administration, because we have followed the consensus of medical opinion to determine whether or not drugs found in interstate commerce are misbranded under the Food and Drugs Act. However, the truth of the matter is that the Court of Appeals of the District of Columbia some 5 years ago reversed a case which had been appealed, because one of the witnesses was asked to state his expert medical

opinion on the therapeutic claims made for the article, and when he was asked if his opinion conformed to the opinion held by physicians generally, the lower court denied him the right to answer this question. The Appellate Court held that this question was material and competent, and should have been answered. It was one of the points on which it based a reversal of the lower court's judgment and instructed that a new trial be granted. Since this decision was had, it has been the practice of the Administration to determine in advance of causing cases to be placed in court against therapeutically misbranded foods or drugs, whether or not the therapeutic claims made for them in the labeling are at variance with the accepted medical opinion based on the composition of the article. Just so long as Appellate Courts continue to reverse decisions of lower courts because they refuse to allow medical witnesses to state that their opinion is or is not in harmony with the generally accepted medical opinion, the Administration will continue to take into account accepted medical opinion when it judges the accuracy of therapeutic claims made for foods or drugs. We have no notion of making any change in this practice until the courts change.

So much for some of the outstanding things for which we have been criticized. I wish now to consider a rather large and important class of drugs, the active principles of which are known to deteriorate in certain of the galenicals prepared from the crude article. As a rule, the present standards contained in the National Formulary and Pharmacopœia for these preparations require that they be of a certain strength, and allow little or no variation from this required strength which will adequately care for deterioration as time passes. For instance, fluidextract of ergot is required to be of a certain definite set strength which we will regard as 100%. If it is above or below this strength, it is illegal. It is the opinion of the Administration that such drugs should have provision made in the descriptive monograph whereby the manufacturer can prepare, we will say for example fluidextract of ergot, of 130% strength, and that this preparation remain standard until it falls below the equivalent of 100% strength. Most fluidextract of ergot will have a legal marketable life under such an arrangement sufficiently long to insure its consumption before a 30% deterioration takes place. We feel that the extra 30% strength thus allowed for fluidextract of ergot is not detrimental to health. We feel that for all such preparations the revision committees of the National Formulary and the Pharmacopœia may make liberal allowances in the strength of deteriorating preparations, taking primarily into account whether or not these allowances might result in detriment to health. We feel that druggists who handle such preparations should not distribute them after they have been on their shelves for an unreasonably long period of time, without first determining whether or not they still retain the required potency.

It has been the policy of the Administration in the past to devote its major activity to the most flagrant violations of the Food and Drugs Act. Certainly a great number of these have been found in the field of therapeutically misbranded drugs. We are certain now that considerable progress has been made in ridding the interstate market of such preparations, and our efforts will be expanded in other directions. This will also be facilitated by the fact that we have received additional funds for enforcement of the Act. The Administration has, therefore, decided that much greater attention will be paid in the future than has been possible in the past to those drug preparations mentioned in the Pharmacopœia and National Formulary. This will result in making the 11th revision of the Pharmacopœia and the 6th revision of the National Formulary of very much greater importance than their predecessors. The standards there laid down should for this reason, if for no other, be fair, explicit and accurate, so as to avoid unfair action and differences of opinion as to what is actually required for these articles. If errors are made in the various monographs, the committees responsible for the standards should make prompt correction of these. If scientific advancement renders the standards obsolete, or for any other reason they become untenable, modifications should result.

The Administration is aware of certain attitudes held by various persons which are improper in connection with the setting of drug standards. The motives which actuated the enactment of the Food and Drugs Act were of a nature the purpose of which was to protect the consumer. The present enforcing officials are actuated by exactly the same motives. The last Supreme Court decision, which I quoted earlier in this talk, shows that that court holds this identical view. Therefore, all of the Governmental agencies having to do with the Food and Drugs Act are in harmony. Those agencies which are under the Act made official—that is, the revision committee of the National Formulary and the Pharmacopœial convention—must of necessity hold the same high motives or else they will run counter to the Governmental forces which

now prevail in the administration of this act. Pharmacy has, in this respect, a very great opportunity and an important obligation to perform. The motives which actuate these committees must be beyond question.

Particularly at the recent Pharmacopœial convention, a great many who participated in that convention became aware of very unfortunate opinions and activities on the part of some of those who set themselves up as leaders. These persons were actuated by thoroughly selfish motives, either for personal or group reasons. It appeared at one time that they actually had control of the convention. As a result, you are no doubt aware of certain movements which are now in full force, which are designed to relieve the Pharmacopœial convention and the National Formulary revision committee of their obligations under the Food and Drugs Act. If these groups cannot avoid the leadership and influence of such individuals, the work of these revision committees will be of low grade and intolerable. Such a result will give force and substance to the contentions of those who are now actively opposing the present arrangement, and will result, no doubt, in a change. The Department of Agriculture has taken a definite stand in regard to this situation. We have said publicly and with determination that so long as the present Act provides for the standards being set by the National Formulary and the Pharmacopœia, we will defend the Act against any who presume to attack it. If the work done is of a grade which is indefensible, then the time will have arrived for changes to be made.

It is clearly the duty of American pharmacy to realize completely its opportunity and its obligations under the Food and Drugs Act, and perform the duties in conformity with the spirit which is behind that Act. It is necessary for American pharmacy to cease to be influenced in any respect by leaders that are selfish, either for themselves or for the group which they represent, in so far as legal drug standards are involved.

"LECTURES ON THE ADULTERATION OF FOODS, ETC."

BY JAMES CUTBUSH.

Dr. James H. Beal has presented to the AMERICAN PHARMACEUTICAL ASSOCIATION a copy of "Lectures on the Adulteration of Foods and Culinary Poisons, the Detection of Poisons in General, and of Adulteration in Sundry Chemical Preparations, Etc. in Medicine and the Arts in a Means of Discovering Them and Rules for Determining the Priority of Substances" delivered in the United States Military Academy by James Cutbush, A. S., U. S. A., member of the American Philosophical Society, Correspondence member of Columbia Institute, etc., and acting Professor of Chemistry and Mineralogy in the U. S. Military Academy, by Ward M. Gazley, Newburgh.

The volume contains also a note by the author donating this volume to Professor Douglas whom he asks to accept the volume as a mark of appreciation and esteem from his friend. Another notation states that the author has not had time to make corrections of errors which have occurred in the book, notwithstanding his care and attention. The volume is a very rare one and to that extent adds to the value of the book.

A smaller volume has been presented with the foregoing on "James Cutbush—an American chemist, 1788–1823," prepared by the late Edgar Fahs Smith, who says in the latter volume that, "recently, attention has been called to a volume by Cutbush entitled 'Lectures on Adulteration of Foods and Culinary Poisons, Etc.' It was published at Newburgh, N. Y., in 1823." The writer (Edgar Fahs Smith) has never seen this volume. "A search for it has been unsuccessful."

James Cutbush was assistant Apothecary-General at the age of twenty-six years. His activities are of record in the many papers contributed to the publications of his day, a number of them pertaining to the manufacture of explosives. We are also interested in the fact that James Cutbush was an apothecary. His advertisement appears in a newspaper of Philadelphia, October 1819, which reads:

"James Cutbush—Chemist and Apothecary—No. 25 South Fourth St., Philadelphia, where complete collections of chemical reagents are kept as usual." We also find that he delivered "Lectures on Theoretical and Practical Pharmacy." An advertisement of 1812 reads, "The subscriber at the solicitation of several medical gentlemen proposed to give a series of lectures on Theory and Practice of Pharmacy accompanied by the necessary chemical elucidations. Tickets may be had at 25 S. Fourth St., price $20.00." Signed, "James Cutbush."

PHARMACEUTICAL EDUCATION MAP FOR PHARMACY WEEK.

Dr. E. L. Newcomb described to the joint committee of the A. PH. A. and N. A R. D. the map of the United States and Canada which the N. W. D. A. has just completed for use by retail pharmacists. He stated that the 1931 map had been prepared under the direction of Mr. William W. Ochse of the San Antonio Drug Co., chairman of the N. W. D. A. Committee on Research and Relations. This map—36″ x 50″ in size—is of the United States and southern Canada. It is lithographed in six colors, the land being in yellow, the ocean in blue, boundary lines in red, printing in black and sepia tints for reproduced photographs. On the face of the map appear the names of all of the cities of the United States wherein colleges of pharmacy are located. The names of these colleges and the dates they were organized also appear in proper position. On the face of the map there also appears in rotogravure, portraits of each of the deans of our schools of pharmacy. Around the border of the map in rotogravure are some 75 photographs illustrating the college of pharmacy buildings and laboratories. Each of these will carry a proper legend. In a box suitably located with the title of the map there is given the remarkable information, that over *thirty millions of dollars* are invested in this country in buildings and equipment used for the purpose of training efficient students in pharmacy to serve in protecting and safeguarding the public health. Nearly 10,000 students, it is stated, were enrolled in our various colleges of pharmacy during the past year. A large number of the institutions illustrated are State institutions and are supported by State appropriations. It is believed, therefore, that a showing of this beautiful map in the drug store windows of the United States will develop a consciousness on the part of the general public of the great importance of pharmacy which will be helpful both to pharmacy and the public.

Over 20,000 of these beautiful posters have been prepared and they will be presented free of cost by wholesale druggists to retail druggists who will use them in their windows during Pharmacy Week. Copies will be given gratuitously to deans in colleges of pharmacy and to the secretaries of State pharmaceutical associations, to manufacturers and wholesalers and extra copies will be complimented to colleges of pharmacy where students will use them in installing Pharmacy Week window displays.

Dr. Newcomb commended in the highest of terms, the support and coöperation which has been given by the drug trade press in support of Pharmacy Week. He referred to the distribution of newspaper stories and radio talks, formerly through his office and then later turned over to Dr. Ruth as chairman of the National Committee, and outlined new radio talks and new stories being prepared for the 1931 observance. He referred to the splendid coöperation being given Pharmacy Week observance by a number of the manufacturers, particularly those who supplied outstanding posters last year.

At Miami it was voted that the A. PH. A. and N. A. R. D. join hands in the preparation of a six-color lithographed National Pharmacy Week window strip and that 20,000 of these be supplied. The window strips will be sent out with the rotogravure map.

The joint committee received additional proposals on means of more adequately promoting Pharmacy Week from Professor Anton Hogstad, Jr., of Merck & Co., Inc., and others. Detail directions for making effective Pharmacy Week window displays have been drafted and these are now available along with the beautiful rotogravure window strips described above. This material may be obtained from service wholesale druggists throughout the country upon request by retailers.

The beautiful cup offered by the Federal Wholesale Druggists' Association for the best Pharmacy Week window display in the United States was exhibited at Miami. This silver cup, which stands over three feet high, has been seen by many pharmacists at State meetings during the past summer. The Missouri Association will feature the prize Cloughly cup which has so effectively stimulated the installation of splendid window displays in the state of Missouri in the past. Many other state associations are planning active campaigns urging their members to take part.

Arrangements are being made for national and local broadcasts on the service of pharmacy. Every retail druggist who is in contact with a local broadcasting station should immediately address the National Pharmacy Week Committee, 51 Maiden Lane, New York City, for copies of radio addresses and arrange to give these over his local station during Pharmacy Week. Copy for newspapers is also available and may be obtained upon request.

EDITORIAL NOTES

Editor: E. G. Eberle, 10 West Chase Street, Baltimore, Md.

Members of the Council, A. PH. A.: S. L. HILTON, *Chairman;* CHARLES H. LAWALL, *Vice-Chairman;* E. F. KELLY, *Secretary;* H. V. ARNY, A. G. DUMEZ, H. A. B. DUNNING, WILLIAM B. DAY, C. E. CASPARI, J. H. BEAL, W. BRUCE PHILIP, T. J. BRADLEY. *Ex-Officio Members:* WALTER D. ADAMS, *President;* J. G. BEARD, J. W. DARGAVEL, *Vice-Presidents;* C. W. HOLTON, *Treasurer;* E. G. EBERLE, *Editor of the Journal;* A. G. DUMEZ, *Editor of the Year Book;* THOMAS ROACH, *Chairman of the House of Delegates.*

Collaborators: The Members of the Council; E. FULLERTON COOK, *Chairman,* U. S. P. Revision Committee; E. N. GATHERCOAL, *Chairman,* N. F. Revision Committee; Chairmen of the Sections, A. PH. A.: L. E. WARREN, C. J. CLAYTON, W. G. CROCKETT, ROWLAND JONES, J. T. LLOYD, TOWNES R. LEIGH, *President,* A. A. C. P.; CHARLES B. JORDAN, *Chairman,* Executive Committee, A. A. C. P.; A. L. I. WINNE, *President,* N. A. B. P.; HENRY C. CHRISTENSEN, *Secretary,* N. A. B. P.

LIST OF THE REGISTRANTS, ANNUAL MEETING, A. PH. A., MIAMI, FLORIDA.

List of Registrants in attendance at the Seventy-Ninth Annual Meeting, A. PH. A.—Corrections and additions respectfully requested; please address JOUR. A. PH. A., 10 W. Chase St., Baltimore, Md.

ACKERMAN, T. J., Miami, Fla.
ADAMS, S. H., Tampa, Fla.
ADAMS, WALTER D., MR. AND MRS., Forney, Texas.
ADLER, M. S., Tampa, Fla.
ALDERMAN, CHARLES H., JR., Miami, Fla.
ALLAN, CLAIR F., Wyandotte, Mich.
ALLEN, W. F., MR. AND MRS., Tampa, Fla.
ALLEN, W. G., MR. AND MRS., Tampa, Fla.
ALLEN, W. R., MR. AND MRS., Tampa, Fla.
APPELL, F. J., Lake City, Fla.
ARMSTRONG, W. D., MR. AND MRS., Daytona Beach, Fla.
ARNOLD, H. C., MR. AND MRS., Floral Park, N. Y.
ARNY, H. V., MR. AND MRS., New York City.
ATKINSON, F. L., St. Petersburg, Fla.

BAKER, A. D., MR. AND MRS., Denver Colo.
BAKER, D. J., MR. AND MRS., Miami, Florida.
BALLARD, C. W., Mt. Vernon, N. Y.
BARKER, H. L., MR. AND MRS., West Palm Beach, Fla.
BARNES, L. W., Stuart, Fla.
BARRITT, W. J., MR. AND MRS., Tampa, Fla.
BAUER, J. C., MR. AND MRS., Baltimore, Md.
BAZEMORE, L. H., MR. AND MRS., Daytona Beach, Fla.
BEAL, GEORGE D., Pittsburgh, Pa.
BEAL, JAMES H., MR. AND MRS., Camp Walton, Fla.
BEARD, J. G., Chapel Hill, N. C.
BECKER, IRWIN A., Chicago, Ill.
BEIRNE, HUGH P., New Haven, Conn.
BENNETT, R. C., MR. AND MRS., St. Petersburg, Fla.
BENSON, CHARLES A., Altemonte Springs, Fla.
BERNER, MARY, MRS., Ada, Ohio.
BIBBINS, FRANCIS E., MR. AND MRS., Indianapolis, Ind.
BIDDLE, L. A., MRS., Miami, Florida.
BINGHAM, W. E., Tuscaloosa, Ala.
BITTING, W. V., St. Petersburg, Fla.
BIXEL, WM. O., Miami, Fla.
BLANTON, C. W., Atlanta, Ga.
BLANTON, John M., MR. AND MRS., Orlando, Fla.
BLISS, A. R., JR., Memphis, Tenn.
BOND, C. A., Miami, Fla.
BOND, G. C., MR. AND MRS., Mt. Vernon, Ill.
BOSLEY, JOHN O., Wilmington, Del.
BOWEN, J. L., MRS., Chicago, Ill.
BOYER, JACK, MR. AND MRS., Tampa, Fla.
BRADLEY, T. J., AND SON, Boston Mass.
BREWER, C. M., MR. AND MRS., Oklahoma City, Okla.
BRIGGS, W. PAUL, MR. AND MRS., Washington, D. C.
BROMLEY, C. L., MR. AND MRS., Tampa, Fla.
BROOKS, O. W., Miami, Fla.
BROWN, HENRY, Scranton, Pa.
BRUNNER, N. J., Miami, Fla.
BUFORD, PRESTON, MR. AND MRS., Jacksonville, Fla.
BULLOCK, J. W., Miami, Fla.
BURLAGE, H. M., MR. AND MRS., W. Lafayette, Ind.
BURNIAC, JOSEPH J., Detroit, Mich.
BURWELL, G. E., Miami, Fla.
BURWELL, L. W., Miami, Fla.
BUSBEE, E. H., MR. AND MRS., Jacksonville, Fla.
BUTLER, C. O., Jacksonville, Fla.
BUTLER, J. M., MR. AND MRS., Gainesville, Fla.
BUTLER, LLOYD A., MR. AND MRS., Coral Gables, Fla.
BYE, MORTIMER, Cincinnati, Ohio.

CAMPBELL, BOOTS, Miami, Fla.
CANIS, OTTO, P. M., Ozone Park, L. I., N. Y.
CANNON, A. B., MR. AND MRS., Frostproof, Fla.
CANNON, CLAUDE C., Galveston, Texas.
CARLISLE, JOHN M., MR. AND MRS., AND DAUGHTER, Miami, Fla.
CASHWELL, OSCAR, Apopka, Fla.
CASEY, THOMAS J., New Castle, Pa.
CASPARI, CHARLES E., St. Louis, Mo.
CAWOOD, J. B., MR. AND MRS., Miami, Fla.
CHAMPA, W. H., Miami, Fla.
CHAPMAN, J. F., MR. AND MRS., Miami, Fla.
CHILDS, HARRY W., St. Petersburg, Fla.
CHRISTENSEN, B. V., MR. AND MRS., Gainesville, Fla.
CHRISTENSEN, H. C., MR. AND MRS., AND DAUGHTER, Chicago, Ill.
CLAUS, EDWARD P., Pittsburgh, Pa.
CLAYTON, CHARLES J., Denver, Colo.
CLAYTON, S. W., MR. AND MRS., Tampa, Fla.
CLEMMER, J. K., MR. AND MRS., AND DAUGHTER, Maimi, Fla.
COE, E. G., Hostings, Fla.
COLEMAN, L. V., St. Cloud, Fla.
COLEMAN, R. S., MR. AND MRS., AND DAUGHTER, Savannah, Ga.
COOK, E. F., MR. AND MRS., Philadelphia, Pa.
COOPER, ZADA M., Iowa City, Iowa.
CORCORAN, JOHN J., Brooklyn, N. Y.
CORCORAN, WM. J., New York City.
COSTELLO, P. H., Cooperstown, N. Dak.
CRANDALL, E. R., Detroit, Mich.
CROCKETT, W. G., Richmond, Va.
CROUCH, S. C., Quincy, Fla.
CURRY, G. L., Louisville, Ky.

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DANDREAU, J. L., Brooklyn, N. Y.
DARBAKER, L. K., MR. AND MRS., Wilkinsburg, Pa.
DARGAVEL, JOHN W., Minneapolis, Minn.
DAVIDSON, BONNIE JEAN, MISS, Miami, Fla.
DAVIS, THOMAS B., MR. AND MRS., Miami, Fla.
DAVY, EDWARD D., MR. AND MRS., AND DAUGHTER, Cleveland, O.
DAY, W. B., MR. AND MRS., Chicago, Ill.
DELEHANTY, T. W., MR. AND MRS., Washington, D. C.
DE LOOCHE, W. H., MR. AND MRS., Tampa, Fla.

DEWEY, M., MR., Palm Beach, Fla.
DINER, JACOB, MR. AND MRS., New York City.
DOSS, M. H., Apalachicola, Fla.
DOUGLAS, H. B., Bonifax, Fla.
DOWNING, W. J., MRS., Miami, Fla.
DOYLE, HENRY V., Yonkers, N. Y.
DREW, J. R., MR. AND MRS., Miami, Fla.
DUMAS, JAMES T., Foley, Ala.
DUMEZ, A. G., Baltimore, Md.
DUNCAN, H. E., MR. AND MRS., Birmingham, Ala.
DUNLAP, SAM, Jacksonville, Fla.
DUNLOP, H., Yonkers, N. Y.
DURHAM, E. E., Corinna, Mich.
DURHAM, F. E., Jacksonville, Fla.
DURRETT, J. J., Washington, D. C.
DYE, C. A., MR. AND MRS., Columbus, O.

EBERLE, E. G., MR. AND MRS., Baltimore, Md.
EDMONDSON, N. C., Miami, Fla.
EDMUNDS, W. T., Augusta, Ga.
ELDRIDGE, CHAUNCEY, MR. AND MRS., Miami, Fla.
EMANUEL, LOUIS, MR. AND MRS., Pittsburgh, Pa.
EMBLEY, JAMES., MR. AND MRS., Miami, Fla.
EMERICH, WM., Orlando, Fla.
ERNSBERGER, D. D., Palatka, Fla.
EVANS, D. S., Orlando, Fla.
EVANS, M. H., Orlando, Fla.
EVANS, W. G., Mr. AND Mrs., West Palm Beach, Fla.

FADER, GEORGE W., Miami Beach, Fla.
FANTO, EMIL C., Bridgeport, Conn.
FARRIS, W. L., MR. AND MRS., Miami, Fla.
FEIRSTEIN, ISAAC, Miami, Fla.
FERGUSON, F. W., MR. AND MRS., Miami, Fla.
FERRELL, R. R., MR. AND MRS., Memphis, Tenn.
FIGARROTTA, A. J., MR. AND MRS., Tampa, Fla.
FINSTAD, AURES, MR. AND MRS., Miami, Fla.
FISCHER, E. B., Minneapolis, Minn.
FLASHMAN, GEORGE F., Salt Lake City, Utah.
FLEMING, ROY W., Reno, Nevada.
FOOTE, P. A., Gainesville, Fla.
FORD, M. N., Columbus, Ohio.
FORMAN, ETTA, MISS, Forney, Texas.
FOSSETT, WM. E., MR. AND MRS., Miami, Fla.
FOSTER, S. C., Atlanta, Ga.
FREELAND, B. B., MR. AND MRS., Miami, Fla.
FRIERSON, JOHN H., MR. AND MRS., Charleston, S. C.
FRISBEE, A. P., MR. AND MRS., Miami, Fla.
FUHRMANN, C. J., MR. AND MRS., Washington, D. C.
FUHRMANN, LEO A., MR. AND MRS., AND SON, Washington, D. C.
FUNK, JOHN A. J., Galveston, Ind.

GALE, WM. M., MR. AND MRS., Miami, Fla.
GARRETT, HENRY, Miami, Fla.
GATHERCOAL, E. N., CHICAGO, Ill.
GAYLE, J. W., Frankfort, Ky.
GERSHENFELD, LOUIS, Philadelphia, Pa.
GESSING, B., Miami, Fla.
GIBSON, R. M., MR. AND MRS., Des Moines, Iowa.
GILBERT, C. T., MR. AND MRS., AND DAUGHTER, Noroton, Conn.
GLOVER, C. C., Ann Arbor, Mich.
GRAVES, L. M., MR. AND MRS., Miami Beach, Fla.
GRAY, WM., Chicago, Ill.
GRIFFIN, EDWIN A., MR. AND MRS., Plant City, Fla.
GROMMET, C. C., Miami, Fla.
GROMMET, G. H., MR. AND MRS., Miami, Fla.
GUSTAFSON, CHARLES, JR., Hartford, Conn.

HALL, JOHN E., Miami, Fla.
HAMMOND, ELERM L., University, Miss.
HANKINS, W. M., JR., AND MRS., Daytona Beach, Fla.
HANSON, FRED A., MR. AND MRS., Miami, Fla.
HANTAM, H. F., MRS., Miami, Fla.
HANTAM, OLLIE M., Miami, Fla.
HARMON, CARL M., AND MRS., Columbia, S. C.
HARPER, HERBERT, Memphis, Tenn.
HARRING, CARL G. A., MR. AND MRS., Newton Center, Mass.
HARRIS, FRED, MRS., Miami, Fla.
HARRIS, LOYD E., MR. AND MRS., Norman, Okla.
HARRISON, F. A., MR. AND MRS., Miami, Fla.
HARRISON, M. F., MR. AND MRS., Miami, Fla.
HASLETT, R. V., MR. AND MRS., Atlanta, Ga.
HAUGHTON, J. H., Palatka, Fla.
HAYES, W. H., MR. AND MRS., Tampa, Fla.
HAYMAN, J. LESTER, Morgantown, W. Va.
HEELAM, A. R., Miami, Fla.
HEIN, Henry F., MR. AND MRS., San Antonio, Texas.
HELMS, SAMUEL T., Baltimore, Md.
HEWING, A. N., MR. AND MRS., Baltimore, Md.
HILL, W. H., MR. AND MRS., Miami, Fla.
HILTON, S. L., Washington, D. C.
HINES, FRANCIS, Miami, Fla.
HOGSTAD, ANTON, JR., St. Louis, Mo.
HOOVER, HARRY, Jacksonville, Fla.
HOUSEAL, VERA, Columbia, S. C.
HUNSBERGER, AMBROSE, MR. AND MRS., Philadelphia, Pa.
HUNTER, JOSEPH W., Miami, Fla.
HUNTER, N. H., MR. AND MRS., AND DAUGHTER, Fort Myers, Fla.
HUSA, W. J., MR. AND MRS., Gainesville, Fla.
HUSSEY, GEORGE, Miami, Fla.

IMRIE RUTH, Coconut Grove, Fla.
IVEY, G. F., Orlando, Fla.

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JOHNSON, JACK, MR. AND MRS., Jacksonville, Fla.
JOHNSON, W. L., MR. AND MRS., Miami, Fla.
JONES, ROWLAND, Gettysburg, S. Dak.
JORDAN, C. A. H., Miami, Fla.
JORDAN, C. B., MR. AND MRS., La Fayette, Ind.
JUDISCH, George, Ames, Iowa.

KAGY, E. O., Des Moines, Iowa.
KALECH, PHILIP, MR. AND MRS., Atlanta, Ga.
KELLAM, A. R., Atlanta, Ga.
KELLY, E. F., Baltimore, Md.
KELLY, THAYER, Miami, Fla.
KING, F. N., Delphos, Ohio.
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KRANTZ, J. C., JR., Baltimore, Md.

LA FONTISEE, LOUIS, MR. AND MRS., Gainesville, Fla.
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LEE, T. B., Chicago, Ill.
LEGG, H. Y., MR. AND MRS., Miami, Fla.
LEHMAN, R. S., MR. AND MRS., Brooklyn, N. Y.
LEIGH, T. R., MR. AND MRS., Gainesville, Fla.
LEMON, A. B., Buffalo, N. Y.
LEROU, H. M., MR. AND MRS., Norwich, Conn.
LEROU, M. T., Miami, Fla.
LETAW, DAVID, MR. AND MRS., Miami, Fla.
LEVY, ISAAC S., MR. AND MRS., Tampa, Fla.
LILES, CHARLES, MR. AND MRS., Coconut Grove, Fla.
LLOYD, J. T., Cincinnati, O.
LOGAN, D. BRYAN, MR. AND MRS., Miami, Fla.
LOOMIS, M. W., MIAMI, Fla.
LYLE, W. L., MR. AND MRS., Bedford, Va.
LYMAN, R. A., MR. AND MRS., AND DAUGHTER, Lincoln, Nebr.

MCCALL, H. W., MR. AND MRS., Jacksonville, Fla.
MCCALL, W. C., Pine Castle, Fla.
MCCLOSKEY, C. GRAHAM, Elizabeth, N. J.
MCCOLLUM, CHARLES E., MR. AND MRS., Miami, Fla.
MCCONAGHY, WM., MR. AND MRS., Pittsburgh, Pa.
MCCULLOUGH, F. V., New Albany, Ind.
MCELROY, J. M., MR. AND MRS., Orlando, Fla.
MCGARR, C. LEE, MR. AND MRS., Coral Gables, Fla.
MCLEMORE, D. F., Britton, Okla.
MARTIN, GEORGE W., MR. AND MRS., Scotia, N. Y.
MARTIN, R. L., South Miami, Fla.
MATHER, GEORGE W., MR. AND MRS., AND DAUGHTER, Scotia, N. Y.
MATHEWS, W. H., MR. AND MRS., Miami, Fla.
MATTHEWS, A. W., MR. AND MRS., Edmonton, Canada.
MEREDITH, H. LIONEL, MR. AND MRS., Ft. Pierce, Fla.
MERRELL, C. C., Miami, Fla.
MERRELL, C. G., Cincinnati, Ohio.
MICHEL, CARL, Miami, Fla.
MILES, C. F. Buffalo, Okla.
MILLER, WALLACE, Miami, Fla.
MILNE, F. A., MR. AND MRS., AND DAUGHTER, Pratt, Kans.
MONELL, Leon, Buffalo, N. Y.
MONROE, H. R., Jacksonville, Fla.
MONROE, STEPHEN, Washington, D. C.
MONTANARO, LOUIS, New Haven, Conn.
MOODY, H. S., Plant City, Fla.
MOORE, H. W., Washington, D. C.
MORITZ, R. M., MR. AND MRS., Miami, Fla.
MORRIS, T. M., MR. AND MRS., Tampa, Fla.
MORRISON, ROBERT, MR. AND MRS., Tampa, Fla.
MOTLEY, E. T., MR. AND MRS., Columbia, S. C.

MULDOON, HUGH C., Pittsburgh, Pa.
MUNCH, JAMES C., MR. AND MRS., AND DAUGHTER, Landsdowne, Pa.
MURDOCK, A. W., MR. AND MRS., Tampa, Fla.
MURRAY, J. E., Baltimore, Md.
MURRAY, W. S., Ft. Lauderdale, Fla.
MYHLERTZ, H. F., Orlando, Fla.

NELSON, C. H., Miami, Fla.
NELSON, JOHN, Lake Park, Miami, Fla.
NETZ, CHARLES V., MR. AND MRS., Minneapolis, Minn.
NEWCOMB, E. L., MR. AND MRS., AND DAUGHTER, Montclair, N. J.
NEWMAN, W. F., SR., Miami, Fla.
NICHOLS, V., MR. AND MRS., Anadance, Okla.
NICHOLSON, M. J., Willcox, Ariz.
NILES, EDWARD H., MR. AND MRS., Indianapolis, Ind.
NILES, R. H., MR. AND MRS., Indianapolis, Ind.
NOH, J. G., Wichita, Kans.

O'CONNELL, C. LEONARD, Pittsburgh, Pa.
OLIVER, E. B., MR. AND MRS., AND DAUGHTER, Longview, Texas.
OLSEN, PAUL C., Philadelphia, Pa.
OSLIN, E. D., MR. AND MRS., Little Rock, Ark.

PACETTI, O. D., MR. AND MRS., Miami, Fla.
PADGETT, S. L., St. Augustine, Fla.
PARKER, T. H., MR. AND MRS., Miami, Fla.
PHILIP, W. BRUCE, MR. AND MRS., San Francisco, Calif.
PIERSON, L. R., Atlanta, Ga.
PLANT, G. D., Miami, Fla.
POE, C. F., Boulder, Colo.
POKES, J. B., Miami, Fla.
PURCELL, E. P., Tampa, Fla.

RAABE, R. H., MR. AND MRS., Ada, Ohio.
RAINEY, R. D., Atlanta, Ga.
RAUZIN, S. MR. AND MRS., Miami, Fla.
REESE, C. B., MR. AND MRS., Miami Beach, Fla.
REEVES, W. G., MR. AND MRS., Orlando, Fla.
REISS, H. W., MR. AND MRS., St. Louis, Mo.
REITER, W. D., MR. AND MRS., Coral Gables, Fla.
RHODES, GEORGE W., Newark, Del.
RICH, R. G., Miami, Fla.
RIEMENSCHNEIDER, J. H., MR. AND MRS., Chicago, Ill.
RISING, L. W., MR. AND MRS., Newark, N. J.
RITTER, JOHN, Miami, Fla.
RIVARD, W. H., MR. AND MRS., Providence, R. I.
ROACH, HAROLD, MR. AND MRS., Miami, Fla.
ROACH, THOMAS, MR. AND MRS., Oklahoma City, Okla.
ROBERTSON, ROSCOE, Kissimmee, Fla.
RODMAN, R. W., Bloomfield, N. J.
ROSE, I. W., Rocky Mount, N. C.
ROSS, J. W., Miami, Fla.
ROTHROCK, R. B., Evansville, Ind.
ROWE, LEWIS W., Detroit, Mich.
RUENZEL, H. G., Milwaukee, Wis.
RUSSELL, HAMILTON, MR. AND MRS., AND DAUGHTER, Pensacola, Fla.

SANDERS, E. B., Cleveland, Ohio.
SCAGGS, BILL, MR. AND MRS., Tampa, Fla.
SCARBORO, KATHLEEN, Miami, Fla.
SCHACTERLE, GEORGE K., Philadelphia, Pa.
SCHAEFER, F. C. A., MR. AND MRS., Brooklyn, N. Y.
SCHAEFER, HUGO H., MR. AND MRS., New York City.
SCHEIBLER, W. F., MR. AND MRS., AND DAUGHTER, Miami, Fla.
SCHICKS, GEORGE C., Montclair, N. J.
SCHLICHTING, A. F., MR. AND MRS., St. Louis, Mo.
SCHMIDT, J. C., Kissimmee, Fla.
SCHNAIDT, H. J., MR. AND MRS., Parkston, S. Dak.
SCOTT, M. B., JACKSONVILLE, Fla.
SCOVILLE, W. L., MR. AND MRS., Detroit, Mich.
SELLIG, C. O., Ft. Lauderdale, Fla.
SERLES, E. R., Brookings, S. Dak.
SHERMAN, G. E., MR. AND MRS., Huron, S. Dak.
SILBER, ROSE, Tampa, Fla.
SIMON, J. F., New Orleans, La.
SIMPSON, W. J., Tampa, Fla.
SLATER, M. W., Ft. Lauderdale, Fla.
SLOCUM, J. W., Indanaola, Iowa.
SMITH, CLIFF, Miami, Fla.
SMITH, CLYDE H., Miami, Fla.
SMITH, FRANK M., MR. AND MRS., Charleston, S. Car.
SPIEHT, H., Miami, Fla.
SPOTTSWOOD, R. F., Key West, Fla.
STANG, H. B., South Miami, Fla.
STEPHENSON, E. B., St. Augustine, Fla.
ST. JOHNS, RUSH, MR. AND MRS., Tampa, Fla.
STOCKING, C. H., Ann Arbor, Mich.
STORY, ETHEL, Miami, Fla.
STOUT, E. P., MR. AND MRS., Detroit, Mich.
STROUP, F. P., Philadelphia, Pa.
STURMER, J. W., MR. AND MRS., Collingswood, N. J.
SUDRO, W. F., Fargo, N. Dak.
SWAIN, R. L., Baltimore, Md.
SWANSON, E. E., Indianapolis, Ind.

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TAYLOR, GEORGE O., MR. AND MRS., Miami Beach, Fla.
TAYLOR, W. G., MR. AND MRS., Lake Alfred, Fla.
TENNYSON, ALFRED L., Washington, D. C.
TERRY, RALPH E., Elmhurst, Ill.
THEIL, JOHN, Pittsburgh, Pa.
THOMAS, A. H., Miami, Fla.
THOMPSON, H. B., Atlanta, Ga.
THOMPSON, M. R., MR. AND MRS., Baltimore, Md.
THURSTON, G. C., Noroton, Conn.
TOUCHTON, M. R., Deland, Fla.
TREADAWAY, C. L., Miami, Fla.
TRICE, G. A., Miami, Fla.
TRIPENY, JOHN B., Casper, Wyo.
TURNER, O. G., MR. AND MRS., Tampa, Fla.
TUTTLE, COL. A. D., Washington, D. C.

VELEZ, LUCAS LUIS, Porto Rico.
VINCENT, H. C., AND SON, Fairfield, Wash.
VINES, ROBERT, MR. AND MRS., Orlando, Fla.

WAGENER, FAY, Miami, Fla.
WALKER, PERCY S., SON AND DAUGHTER, Topeka.
WALRATH, C. L., MR. AND MRS., Oklahoma City, Okla.
WALTER, FRANK A., San Antonio, Texas.
WALTON, L. L., MR. AND MRS., Williamsport, Pa.
WARD, JUSTUS C., MR. AND MRS., Denver, Colo.
WARREN, L. E., Chevy Chase, Md.
WEAVER, CLAUDE, MR. AND MRS., West Palm Beach, Fla.
WEIR, R. M., MR. AND MRS., Miami, Fla.
WELLS, MARY L., Miami, Fla.
WHELPLEY, H. M., MRS., St. Louis, Mo.
WHITNEY, D. V., MR. AND MRS., Kansas City, Mo.
WILEY, P. T., Miami, Fla.
WILHELMI, GEORGE, Newport, Ky.
WILLIAMS, FRANK C., Tampa, Fla.
WILLIAMS, R. A., Orlando, Fla.
WILLIS, BEN C., Quiney, Fla.
WILLIS, L. L., MR. AND MRS., Quiney, Fla.
WILLSON, J. F., MR. AND MRS., Tampa, Fla.
WILSON, ROBERT, MR. AND MRS., Athens, Ga.
WIMMER, C. P., MR. AND MRS., New York City.
WINNE, A. L. I., Richmond, Va.
WISE, J. W., Dover, Del.
WOOD, PHILIP R., Miami Beach, Fla.
WRIGHT, JOHNSON, MR. AND MRS., Miami, Fla.

YOUNG, EDDIE LEE, Maimi, Florida.
YOUNGKEN, HEBER W., Arlington, Mass.

ZEIGLER, W. H., MR. AND MRS., Charleston, S. C.
ZINDLER, FRED L., Detroit, Mich.
ZOELLER, E. V., Tarboro, N. C.

OMISSIONS FROM THIS SECTION OF THE JOURNAL.

Owing to Association matter in other sections of the Journal, it is necessary to cut down the number of pages of this issue in this section.

The addresses and resolutions are of general and immediate interest to pharmacy. The transactions of the Miami meeting will be continued in succeeding issues and thereafter a larger number of pages will again be given to this Section.

OFFICERS AND NOMINEES, A. PH. A.

The *Chairman* of the House of Delegates for 1931–1932 is Thomas Roach, of Oklahoma; the *Vice-Chairman*, J. W. Slocum, of Iowa; the *Secretary*, E. F. Kelly, Maryland.

The Committee on Nominations of the House of Delegates presented the following names as nominees for officers for 1932–1933; the General Session approved the nominations and the election will be by mail ballot—one for each of the officers, and three members of the Council to be elected; the nominees are:

For *President:* C. B. Jordan, Indiana; Edward Kremers, Wisconsin; W. Bruce Philip, California.

For *First Vice-President:* Rowland Jones, S. Dakota; Wortley F. Rudd, Virginia; C. A. Dye, Ohio.

For *Second Vice-President:* G. H. Grommet, Florida; C. E. Mollett, Montana; John Culley, California.

For *Members of the Council:* J. H. Beal, Florida; C. H. LaWall, Pennsylvania; C. E. Caspari, Missouri; L. L. Walton, Pennsylvania; W. M. Hankins, Florida; J. W. Sturmer, Pennsylvania; C. P. Wimmer, New York; E. H. Kraus, Michigan; W. L. Scoville, Michigan.

THE CONFERENCES OF PHARMACEUTICAL ASSOCIATION SECRETARIES AND LAW ENFORCEMENT OFFICIALS.

The two conferences above mentioned held most successful meetings which will be reported in an early issue of the JOURNAL. These bodies are very helpful to the State Associations through the discussions and exchange of ideas and experiences; both of them are now represented in the House of Delegates, A. PH. A.

HOME TOWN HONORS PRESIDENT WALTER D. ADAMS.

Preparations were nicely carried out for honoring President W. D. Adams by his home-town (Forney) August 14th. Quite a number of friends were also in attendance from other points in Texas, among them Walter H. Cousins of Dallas; Harry C. Withers, Managing Editor of the *Dallas Journal;* Fred I. Massengill, member of the Texas press; Dr. D. H. Hudgin, secretary of Kaufman County Medical Society. There were present other pharmacists of the state who had come to extend congratulations to the president. Mrs. Adams was not overlooked, for Mrs. B. B. Hulsey was given her opportunity in the toast "The Power Behind the Throne."

A number of telegrams and congratulatory letters were read.

The evening, the main purpose of which was to do honor to President Adams, was a most delightful occasion.

ARKANSAS PHARMACEUTICAL ASSOCIATION.

Secretary E. D. Oslin attended the Miami meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION. He is encouraged with the progress of ASSOCIATION affairs in Arkansas under the plans now in effect. The officers of the Association are: *President*, Frank Ward, Hope; *First Vice-President*, Charles T. Hall, El Dorado; *Second Vice-President*, Julian Owenby, Fayetteville; *Treasurer*, J. H. Poch, Jr., North Little Rock; *Secretary*, E. D. Oslin, Little Rock.

FLORIDA PHARMACEUTICAL ASSOCIATION.

Florida Association took advantage of the meeting of the AMERICAN PHARMACEUTICAL ASSOCIATION at Miami and held its sessions during the same week, and a number of those in attendance at the A. PH. A. meetings were guests and speakers of the Florida Association. Among them were: Prof. Paul C. Olsen, President H. C. Christensen, Secretary E. F. Kelly and President Julius Riemenschneider, of the N. A. R. D.

President Harry Childs stressed coöperation as a key-note of his address and spoke for a strengthening of the relationship with the medical profession. He recommended several meetings of the Executive Committee during the year.

The following officers were elected: *President*, J. H. Haughton, Palatka; *First Vice-President*, N. C. Edmondson, Miami; *Second Vice-President*, E. P. Purcell, Tampa; *Third Vice-President*, W. G. Taylor, Lake Alfred; *Secretary-Treasurer*, George H. Grommet, Miami.

MASSACHUSETTS PHARMACEUTICAL ASSOCIATION.

Massachusetts Pharmaceutical Association celebrated its Golden Anniversary at the New Ocean House, Swampscott, June 29th to July 1st. Governor Ely was the principal speaker; other speakers were Congressman William P.

Connery, Secretary E. F. Kelly, A. PH. A. "Trade Interests" was the subject of an address by Louis G. Heinritz and "Drug Store Profits" were explained by R. Lee Smith.

President T. Willard Burke discussed legislative matters and association affairs. The officers for the ensuing year are: *President*, Joseph M. Sisson, Boston; *First Vice-President*, Charles F. Brow, Jr., Fall River; *Second Vice-President*, Amos H. Dows, Lowell; *Treasurer*, Lyman H. Griffin, Allston; *Secretary*, Carl G. Harring, Newton Centre.

MISSISSIPPI ASSOCIATION.

After two years of effective service Charles E. Wilson is succeeded by B. F. Duckworth, of Booneville; a complete roster of the officers is listed under State Associations. During his term of office he visited Arkansas, Louisiana and Tennessee associations, thus bringing about a closer pharmaceutical relationship of these adjoining states. His address was devoted to professional and business direction, stressing the importance of the former as fundamental and pointing out the opportunity during Pharmacy Week for making patrons better acquainted with pharmacy as a public health service. He commended the work Mr. Anding has been doing and felt encouraged by the results.

MONTANA PHARMACEUTICAL ASSOCIATION.

The annual meeting of the Montana Pharmaceutical Association was held at Helena, July 13th–14th. A number of interesting papers were read and discussed. Dean C. E. Mollett of the School of Pharmacy reported on the activities of the school.

President Clinton's address was largely given to business management, opposition to predatory price cutting and certain methods of advertising.

The following officers were elected for the ensuing year: *President*, James F. Murray, Malta; *Vice-Presidents*, Oakley A. Coffee, Missoula; Howard B. Craig, Drummond; *Secretary*, J. A. Riedel, Boulder; *Treasurer*, G. A. Challman, Hobson. The 1932 meeting will be held at Missoula.

OREGON PHARMACEUTICAL ASSOCIATION.

President John T. Witty stressed the profession of pharmacy in his address, the greater part of which was made up of references to college training of the pharmacist. He encouraged a closer relationship of pharmacists.

Resolutions adopted by the Association endorsed the Philip survey, the Capper-Kelly Bill and a chain store tax.

The following were elected officers of the Association:

President, George W. Steelhammer, Silverton; *First Vice-President*, Harry Wis, Portland; *Second Vice-President*, A. S. Kier, Hood River; *Third Vice-President*, Roy A. Perry, Portland; *Treasurer*, John Laue, Jr., Portland; *Secretary*, A. W. Allen, Portland.

TENNESSEE PHARMACEUTICAL ASSOCIATION.

The annual meeting of Tennessee Pharmaceutical Association was held in Memphis, July 21st to 23rd. President C. R. Heinrich, in his address, discussed state and national legislation. He strongly opposed chain stores. Among the speakers of the convention were: President Julius Riemenschneider, of the N. A. R. D.; Chairman E. Fullerton Cook, of the U. S. P. Revision Committee; Wroe Alderson, representative of the U. S. Department of Commerce and Secretary E. F. Kelly, of the AMERICAN PHARMACEUTICAL ASSOCIATION.

The following officers were elected for the ensuing year:

President, John S. Sheehan, Memphis; *First Vice-President*, George W. Fillauer, Chattanooga; *Second Vice-President*, L. F. Mitchell, Nashville; *Third Vice-President*, Robert Ferrell, Memphis; *Secretary*, W. P. Winter, Nashville; *Treasurer*, T. J. Berryhill, Jackson.

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

The 88th meeting of the American Association for the Advancement of Science was held at Pasadena, June 15th to 20th. A number of interesting scientific and research exhibits were open to the public, an actual demonstration of the utilization of light by the green plant to form oxygen and starch was shown and the light-absorbing ability of plants demonstrated.

The mid-winter meeting will be held in New Orleans. The officers are:

President, Franz Boas, Columbia University; the retiring *President* is Thomas Hunt Morgan of California; the *Permanent Secretary* is Charles F. Roos and the *General Secretary* is

Burton E. Livingston of Johns Hopkins University.

THE BRITISH PHARMACEUTICAL CONFERENCE.

The Manchester meeting (week of July 21st) of the British Pharmaceutical Conference has been pronounced by the British pharmaceutical press as eminently successful. The chairmen of the Conference prepare addresses along different lines from those of the presidents of the AMERICAN PHARMACEUTICAL ASSOCIATION. A single subject is usually chosen by the former; this year the chairman (Mr. J. H. Franklin) selected as the subject of his address "Manchester Men of Science." A comment in the *Chemist and Druggist* states that

"Mr. Franklin's address as chairman of the British Pharmaceutical Conference commends itself because of its originality no less than because of the appropriateness of its subject in the setting provided by the great industrial center where the meeting was held. One would have liked to listen to a crystallized statement of the author's views on practical pharmacy, the subject he has accustomed us to regard as being peculiarly his own; but presumably he may consider that those views are expressed sufficiently in the records of his work, from which we may be left to draw our own conclusions. As it is, the writer imagines Mr. Franklin was gratified that the communications to the Science Session of the Conference included so considerable a proportion of what one may term purely pharmaceutical papers, such as are likely to interest and instruct all of us who take a pride in our profession and are not content to sell and dispense ready-made physic about the production of which we know little or nothing."

The papers presented do not differ greatly from those of the Scientific and Practical Pharmacy and Dispensing Sections of the A. PH. A. A few may be mentioned which differ as, "Determination of Strychnine in Easton's Syrup;" "Brief Notes on Syrup of Senna;" "Total Solids of Tinctures of Digitalis;" "Study of the Hydroxy-Acid Complexes of Iron." A number of papers dealt with bismuth salts and preparations. All of the titles indicate most interesting and valuable reports and researches.

The following officers were elected for the year 1931–1932:

Chairman—Herbert Skinner.

Vice-Presidents—Messrs. G. Claridge Druce, W. A. H. Naylor, Robert Wright, J. F. Tocher, F. Ransom, E. H. Farr, E. Saville Peck, David Hooper, W. Kirkby, C. A. Hill and H. G. Greenish.

Vice-Chairmen—Messrs. F. W. Gamble, D. Lloyd Howard, R. R. Bennett, J. T. Humphrey and J. H. Frankline.

Hon. Secretaries—C. E. Corfield and G. R. Boyes.

Hon. Treasurer—F. W. Crossley Holland.

Members of the Executive—Messrs. H. Berry, B. A. Bull, H. Brindle, C. H. Hampshire, T. E. Lescher, C. A. Noble, with Messrs. W. J. Beardsley, J. Keall, T. Marns (nominated by the Council of the Pharmaceutical Society), together with the following, *ex officio:*

President (the president of the Pharmaceutical Society of Great Britain), the president of the Pharmaceutical Society of Northern Ireland, the chairman of the North British Executive of the Pharmaceutical Society, the chairman of the Local Committee and the honorary local secretary.

OBITUARY.

WYMOND HENRY BRADBURY.

Wymond H. Bradbury, member of the AMERICAN PHARMACEUTICAL ASSOCIATION since 1895, and Manager of the Washington Wholesale Drug Exchange, Washington, died suddenly in his office in the Exchange Building, Washington, July 21st, aged sixty-one years.

Soon after graduation in pharmacy he came to Washington and engaged in the retail drug business. When the Washington Wholesale Drug Exchange was formed he was elected Manager and performed these duties ever since that time and also continued his retail pharmacy. Mr. Bradbury was active in the organizations relating to pharmacy, including the Veteran Druggists' Association. His health had not been very good for some time but he was improving and contemplated a trip for recreation. He was a persistent worker and highly regarded by his co-workers, patrons and neighbors.

The deceased is survived by his widow and one daughter.

ARCHIE PERCIVAL LOHNESS.

Prof. A. Percival Lohness, member of the AMERICAN PHARMACEUTICAL ASSOCIATION since 1913, and member of the faculty of the Brook-

lyn College of Pharmacy for many years, died July 28th, at Franklin, N. J., after a brief illness, aged sixty-five years.

Professor Lohness was a native of New York State. His early education was obtained near Troy and later at Hudson, N. Y. He graduated from the National College of Pharmacy in 1888. In 1893, he became identified with the Brooklyn College of Pharmacy; his ability as an instructor being recognized, he was appointed professor of Materia Medica and Pharmacognosy, in 1896. He was a member of New York State Pharmaceutical Association, Kings County Pharmaceutical Association, Brooklyn Institute of Arts and Sciences, and the New York Veteran Druggists' Association.

LOUIS SCHULZE.

Louis Schulze, former president and also secretary of the Maryland Pharmaceutical Association, and for some years member of the Maryland State Board of Pharmacy, died July 28th at his home in Baltimore, aged 67 years. Mr. Schulze owned and conducted a pharmacy at 2245 Eastern Ave., Baltimore.

The deceased had been a member of the AMERICAN PHARMACEUTICAL ASSOCIATION since 1892. Sympathy is expressed to the bereaved.

LEGAL AND LEGISLATIVE.

ALABAMA PHARMACY LAW.*

The new Alabama pharmacy law defines a "pharmacist:" "When not otherwise limited, means a person duly registered or licensed by the Board of Pharmacy to practice pharmacy in this state." The definition for "Pharmacy" is: "When not otherwise specifically designated 'Apothecary Shop' or 'Drug Store,' shall, for the purpose of this Act, mean a place registered by the Board of Pharmacy, where drugs, medicines, prescriptions, chemicals or poisons are compounded, dispensed or retailed."

The board is empowered to make by-laws, rules and regulations and fix standards for registration except as otherwise specified and is to employ the necessary chemists, inspectors, clerks and attorney. A chief inspector and two assistant inspectors are to be employed in addition to the officers listed above.

Included in the provisions is the definition of who may sell, compound, dispense drugs and medicines, and the use of the term drug store, pharmacy, etc., prohibited unless registered pharmacists are in charge: It is unlawful, the measure states, for any person, firm, corporation or copartnership to open or conduct a place of business, pharmacy, dispensary, drug store, apothecary shop or store in which drugs, medicines or poisons are retailed, compounded and dispensed, or to stock, expose or offer for sale at retail any of the above except as specifically provided, or to use or exhibit the title "drugs," "drug store," "drug shop" or "apothecary," or any combination of such words or titles—or any title or description of like import, or any other term or terms designated to take the place thereof, without placing in active personal charge and on duty at all times during business hours (except for temporary absences defined by the board) a duly registered and licensed pharmacist. The law also makes it unlawful to advertise as pharmacists unless there are registered pharmacists in the employ of the company. Penalty for violation is not less than $25 and not more than $200, and cost of prosecution of first offense $50 and $200 for each additional offense.

Requirements for a registered pharmacist, the bill states, includes that every applicant to be 21 years of age, good moral character, temperate habits, graduate of Grade A school or College of Pharmacy, recognized by the board (university to have requirements not less than the minimum requirement for membership in the American Association of Colleges of Pharmacy), shall file proof of sufficient service and experience in retail pharmacy under supervision of retail pharmacist, to make a total together with actual time in college attendance of at least four years of pharmaceutical training and shall pass an examination by the Board of Pharmacy. Those holding license as assistant pharmacist may take a pharmacist examination before July 1932, if they desire, and if successful, be issued pharmacist license.

* An analysis in the *Southeastern Drug Journal* has been drawn upon.

MARIHUANA STUDY.

In drafting plans for the administration of federal farms for treating narcotic addicts officials of the Public Health Service are considering the advisability of providing for a special study of the treatment of marihuana cases.

RESALE PRICE-FIXING UPHELD IN DENMARK.

Retail prices fixed by a manufacturer, domestic or foreign, are inviolable in Denmark, according to a decision recently handed down by a Danish court, according to a report from Assistant Trade Commissioner Paul H. Pearson at Copenhagen.

The case was that of a German manufacturer of bicycle lights who has a settled policy of holding to fixed prices throughout the world. To that end his containers bear certain control numbers and are also marked with the retail price of the light for each particular country.

He discovered a local company dealing in bicycle accessories was selling his lights from $1^1/_2$ to 2 crowns below the price fixed for the Danish market (crown equals approximately 27 cents). The lights furthermore were of a type which were supposed to be only sold in Germany and the containers were prominently marked "Ausfuhr verboten" (export forbidden).

The court held that the Danish company must hold to the prices stipulated by the manufacturer and that it was unauthorized to sell the lights in any other packing than the original containers. Furthermore it was held that the sale by the local company of lights marked "export forbidden" was unwarranted.—Issued by the U. S. Department of Commerce.

DETECTION OF SYNTHETIC DRUGS. (ABSTRACT.)

BY L. ROSENTHALER.

Reactions, together with illustrations of characteristic micro-crystals, are given of a number of recent synthetic drugs. *Diocaine* (*p*-dialloxyethenyldiphenylamidine hydrochloride). Characteristic micro-crystals are obtained with ammonia, sodium, chloride, potassium bromide, ammonium thiocyanate, potassium iodide and sodium perchlorate. Potassium permanganate is quickly reduced. *Percaine* (α-butyl-oxycinchoninic acid diethylethylene diamide hydrochloride). Ammonia, potassium periodate, potassium iodide, sodium nitrate, and ammonia thiocyanate give characterictic micro-crystals. The majority of alkaloid reagents give precipitates with this compound, many of which are amorphous. *Dial* (Diallylbarbituric acid). Crystals are obtained by the addition of ammonium chloride to the solution in caustic soda. An alkaline solution of dial gives, with silver nitrate a white precipitate which becomes biuret color on boiling. *Elbon* (*p*-hydroxyphenyl urea cinnamic ester). Oxidation with potassium permanganate gives benzaldehyde. Cinnamic acid may be obtained and identified after boiling with soda and extracting with ether. By heating with strong sulphuric acid and vanillin, a yellow precipitate is obtained. The solution in concentrated sulphuric acid is colored deep orange by nitric acid. By adding a little very concentrated alcoholic potash to the compound, it first dissolves, then characteristic crystals are obtained in two forms. *Septacrol* (dimethyldiamino-*N*-methyl-acridinium nitrate silver nitrate). Silver and nitric acid may be detected by means of potassium dichromate and nitron, respectively. The compound is characterized by the strong green fluorescence of its solutions. On the addition of dilute sulphuric acid, this disappears, and if nitrite is then added, the saturated solution becomes red, while the color of dilute solutions practically disappears. *Lipiodin* (diiodobrassidic acid ethyl ester). By warming lipiodin with saturated alcoholic potash on the object glass, characteristic crystals of potassium iodide are obtained. Iodine is obtained by warming with concentrated sulphuric acid. *Atoquinol* (2-phenylquinoline-4-carboxylic acid allyl ester). The components may be detected after saponification. Crystals are obtained on sublimation. *Coramine* (β-pyridine carboxylic acid diethyl amide). By heating with fuming sulphuric acid, making alkaline, and distilling, a solution of diethylamine is obtained and may be identified by the violet color with nitroprusside and acetaldehyde. Crystalline precipitates are obtained with mercuric chloride, Mayer's reagent, and Reinecke's salt.—*Pharm. Ztg.*, through *Quarterly Journal of Pharmacy and Pharmacology*, 4 (1931), 244.

A Note on the Assay of Spirit of Ethyl Nitrite, by W. F. Reindollar and John C. Krantz, Jr.

In this paper a comparison is made between the silver nitrate method and the gasometric method assaying spirit of ethyl nitrite. Also experiments are shown to determine the vapor tension of the reaction mixture and its influence on the gas volume as measured in the gasometric assay. A comparison of the gasometric assay with the silver assay has been set forth with the view of introducing the silver nitrate assay for the spirit in the eleventh revision of the Pharmacopœia.